AMERICAN

1274
22

VETERINARY REVIEW

EDITED BY

PROF. A. LIAUTARD, M.D., V.M.

Member Central Society of Veterinary Medicine (Paris). Honorary Fellow Royal College of Veterinary Surgeons (England). Foreign Corresponding Member Academy of Medicine Bruxelles (Belgique).

AND

Prof. ROBERT W. ELLIS, D.V.S.

WITH THE COLLABORATION OF

Prof. W. J. COATES, M.D., D.V.S., New York-American Veterinary College.
OLAF SCHWARZKOPF, Veterinarian, 3d Cav., U. S. Army, Fort Sam Houston, Texas.
Prof. W. L. WILLIAMS, V.S., New York State Veterinary College, Ithaca, N. Y.
Prof. S. STEWART, Kansas City Veterinary College, Kansas City, Mo.
M. H. MCKILLIP, M.D., V.S., McKillip Veterinary College, Chicago, Ill.
B. F. KAUPP, M.S., D.V.S., Pathologist Colorado Agricultural College, Division of Veterinary Science, Fort Collins, Col.
Prof. M. H. REYNOLDS, University of Minnesota, St. Anthony Park, Minn.
WM. H. DALRYMPLE, M.R.C.V.S., Veterinarian Louisiana Ag. Exp. Sta., Baton Rouge, La.
JOHN P. O'LEARY, V.M.D., Bureau of Animal Industry, Buffalo, N. Y.
A. T. KINSLEY, M.Sc., D.V.S., Path. Kansas City Veterinary College, Kansas City, Mo.
J.G. RUTHERFORD, V.S., H.A.R.C.V.S., Veterinary Director-General and Live Stock Commissioner, Ottawa, Canada.
J. F. DE VINE, D.V.S., Dept. Agr., Goshen, N. Y.
D. ARTHUR HUGHES, Ph.D., D.V.M., Insp Comm. Dept., U. S. Army, Chicago, Ill.
JOHN R. MOHLER, V.M.D., Chief of Pathological Division, B.A.I., Washington, D. C.
L. A. MERILLAT, V.S., Chicago Veterinary College, Chicago, Ill.
D. E. SALMON, D.V.M., Director of the Veterinary School, Montevideo, Uruguay.
Prof. VERANUS A. MOORE, Director, New York State Veterinary College, Ithaca, N. Y.
RICHARD P. LYMAN, Dean Vet. Div. Mich. Agr. College, East Lansing, Mich.
C. J. MARSHALL, V.M.D., Sec'y A. V. M. A., Philadelphia, Pa.
A. D. MELVIN, M.D.C., Chief of B.A.I., Washington, D. C.
GEO. H. GLOVER, M.S., D.V.M., Pres. A. V. M. A., Colo. Agr. Coll., Ft. Collins, Colo.

And several others.

VOLUME XXXIX.

NEW YORK:
PUBLISHED BY AMERICAN VETERINARY REVIEW,
509 WEST 152d STREET.

AMERICAN VETERINARY REVIEW.

APRIL, 1911.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, February 15, 1911.

PROF. WILLIAMS' OPERATION FOR ROARING.—Our readers and every veterinarian in America knows all about it. Our journals, our societies, his own publications have made it popular in the United States and in Europe. It has been adopted by American surgeons for many reasons: Its simplicity, the results that it has given and possibly because it was from an American surgeon. Why not?

But Prof. Williams was probably not satisfied with the glory that his operation had gained for him in his own country, or, knowing as I do, more likely because of wishing to extend to all the benefits that the operation would give, he came to Europe, stopped in England and there demonstrated his *modus operandi;* initiated English veterinarians in the technic required, and he left for the Continent on other business.

Why he stopped in England was evidently a generous act. England has, right or wrong, the reputation of being, in roaring horses, richer than any other country, and if so, it certainly was a good place to test the value of the operation and do an immense amount of good by Williams' act of professional generosity.

The result was not to be doubted. It received a brilliant welcome and soon proved a grand success. The number of horses reported as having been operated and relieved of the infirmity so common among some breeds of English horses, either by Williams' operation or with the modified method of Hobday, being simply wonderful. Indeed several hundreds of operations, followed by an enormous number of wonderful successes (excellent or satisfactory), and the names of some English veterinary celebrities who received more booming advertising notices than they desired; I am sure, all that forms a record that I believe is without parallel in veterinary surgical archives. And finally, the success was such that it appeared then, that the time had come to attribute the paternity of the original operation to where it belonged.

It would have seemed at once that, of course, to Prof. Williams such paternity did belong. But there were doubtful opinions. These were expressed just in England where Williams had so generously shown how to operate. For some writers there, the operation was of German origin. For others it belonged to England. And I wonder that some did not claim it as French, as long as a veterinarian of that nationality had attempted it years and years ago. It is true that Gunther had performed it or something similar. It is true that Fleming has alluded to it; but experiments and trials, as long as they remain as such; as long as they are not made public, and as long as they have never entered general practice, even as experiments, can they come into competition against one which has been the object of initiative inquiries, of personal persistent efforts in making it perfect and available to all, and has had the extensive professional publicity as that of Prof. Williams' has.

In the presence of all that was written in several professional papers of England, the learned professor of Cornell University at last had his excessive modesty overcome. He felt the right to defend his own and he sent to the English press a letter where he has demonstrated that which he thinks his just claim and established his priority on that subject.

Further inquiries has been spoken of. It will prove useless. But at any rate it will be pleasant for our friend Williams to take good note of the paragraph ending an editorial notice of the *Veterinary News* where it is said: "This is a small criticism and it is dwarfed by the fact that for the present day introduction and practice an operation which is apparently of considerable value, Prof. W. L. Williams must be adjudged responsible. For that work he will deserve the thanks of the profession to which he belongs and of many horse owners in this and other countries."

Again in the *Veterinary Record,* "I maintain that the *pioneer* work that Doctor Williams, the American surgeon, has done, deserves the highest praise."

These, we hope, will close the incident in a satisfactory manner to our American friend and that the operation must and will remain to be known as Williams' operation. And, after all, what does it matter, if Gunther's, Williams', Hobday's or somebody else's as long as it is successful.

* * *

CHOROIDAL TUBERCULOSIS.—Tuberculous conditions of the eye can and do exist; the disease affecting either the essential or the accessory organs of sight and yet some pass unrecognized for some reason or another, either because of their peculiarities, their aspect, their specific location or the species of animals where they exist. For instance, choroidal tuberculosis has not been described, and probably when it existed, it seems generally to have been detected only at post mortem.

Doctor Hancock, F.R.C.S., and Doctor George Coates, M.D., F.R.C.S., have, in the *Veterinary Record,* published their observations of five cases of tuberculous choroiditis in the cat, where they minutely described the clinical features, with the post mortem lesions and the results of their experimental inoculations. It is true that these cases were observed in cats, but as long as the veterinary literature seems to be silent on this subject, the

report of the English ophthalmologists is very interesting. Anyhow knowing the symptomatology, their presence will be valuable in the case of large animals suffering with such localization and it will be of great assistance in the diagnosis with smaller animals; cats and dogs, for instance, and will suggest the propriety of their being carefully looked for in those cases where at the post mortem of animals condemned by tuberculin, no lesions are to be found in their ordinary location. As proof of this, it may be mentioned that at the post mortem of five out of the six cases reported in the *Record,* in one the affection of the two choroids was the only tuberculous lesion to be found. In all the remaining four, the lungs were diseased; in one, the kidneys; in three, the liver, spleen, suprarenal capsulae and mediastinal glands in one. The meninges and brain were invariably normal.

To confirm the nature of the lesions, thus found in the choroids, experimental inoculations were carried out and proved positive. Koch bacilli being detected at the autopsies of all the animals dead with inoculation.

As taken from the five cases, the clinical features may be briefly résuméd as follows: The first thing noticed is that the animal is blind, one or both eyes are affected, more generally the latter. The animal may be in good condition or much emaciated. The temperature has ranged between 102 degrees and 104 degrees Fahrenheit. At first there are no signs of inflammation in the anterior parts of the eye. The pupils are widely dilated, not reacting, or if so, sluggishly. At times there is contraction. "With the ophthalmoscope, extensive areas and smaller discrete spots of a yellowish exudation are seen beneath the retinal vessels." These may be normal or enlarged and very tortuous. Retinal hemorrhages are seldom absent. "Early in the disease, detachments of the retina are found; they may become complete or the retina may be adherent to the main areas of exudation and detached elsewhere. The vitreous is usually free from floating opacity, but extensive fibrous webs may stretch into it from the fundus."

"In the last stages the inflammation began to appear in the anterior parts of the eye. The brilliant golden color of the iris becomes dull and more greenish. The pattern is less sharp, and new vessels may form on the surface. A peculiar vascular lace-work spreads across the pupil on the anterior face of the lens. * * * Sometimes little vascular plexuses are formed on the surface of the lens giving rise to easily visible red patches. * * * Posterior synechia may or may not be present. * * * Along with these changes there is pericorneal congestion, and the periphery of the cornea becomes vascularized by the spreading in of fine vessels. In one case the intraocular tension became low and the eye showed signs of shrinking. In another the iris was bulged forward and the tension although normal, had evidently been raised since the globe was expended and buphthalmic."

The animals which were the subjects of the important observations of the English surgeons were: a male cat, eight months old, with lesions in the anterior mediastinal gland and in the liver; a black cat, four or five years old, which at autopsy showed old and recent pleurisy, nodules in the lungs, spleen, kidneys and suprarenal capsula; a prize black kitten of five months, with renal and pulmonary lesions; a black pedigree Persian cat, aged twelve months, in which, with the exception of some hemorrhages in the thymus, no lesions were found in any of his organs. He had tuberculous choroiditis of both eyes; a tabby cat, full grown, blind in both eyes, had tuberculous deposits in the lungs and the kidneys.

* * *

INTRADERMICULTURE IN VARIOUS INFECTIONS.—Under the name of abscesses of fixation I have alluded some months ago to a method of revulsion, which since seems to have been gaining admission in human medical practice on the Continent, but in a much more extensive application. To-day indeed, I may be permitted to consider it under different lights, viz.; that of its application to the diagnosis, the prognosis and the treatment of

infections in general; all valuable facts which I find under the heading of "Practical Medicine" in one of the best medical journals here, the *Presse Medicale*.

The method of abscesses of fixation has entered practical medicine to the therapeutic point of view that we have considered before, but its admission to the semeiological point of view has remained much discussed. And if agreement has been reached as far as the bactericid action of oil of turpentine, upon internal media and for the stimulus caused by the subcutaneous injection upon the defensive organs of the individual, authors still disagree upon the presence of the microbian germs in the pus of the abscess. But if, instead of oil of turpentine for the intradermic injection, croton oil is used and injected in animals infected with various microbes, the result is different. First a serous swelling, of congestive nature, takes place, and is soon followed by the pullulation of the infecting microbes, which gather in, at the point of the hydrophlegmasia and the formation of an abscess with pus in which the microbes still are present. Hence the application of the method to the diagnosis by the detection of the infecting microbes.

The reaction that follows the infection serves to establish the prognosis. It is indeed by the conclusions of the cases experimented with and closely watched, that these were established, viz.: when the reaction obtained by the injection at the point where the operation has been made, is well marked, then the prognosis is favorable, and on the contrary is unfavorable, if the primitive hypodermic reaction has not been present or has been very slight. For the application of the intradermic therapeutic results in the treatment of infections a special preparation is needed, viz.: the collection of the pus of the primitive abscess, its thorough sterilization and then its injection directly in the subcutaneous tissue.

The technic of these various operations need explanation. The preparation to be injected so as to obtain the first primary abscess is as follows: *One single* drop of a mixture of one part of croton oil with two of oil of sweet almonds is injected with

all possible antiseptic care. The operation is very painful, is made with the bevelled part of the syringe turned upwards. After a few minutes of contact of the oil with the tissues, it is aspirated again in the syringe, which had been left in place and extracted. The abscess takes place towards the fourth day, when the pus can be collected in a sterilized syringe.

For the therapeutic application, to each cubic centimeter of the sterilized pus (that of the first abscess), five drops of iodine solution at one to ten, are added, and one-quarter, one-half, and exceptionally, one cubic centimeter of this mixture is injected. The operation being renewed more or less often according to the degree of infection.

The practical results so far obtained and recorded after experiments and observations on cases of generalized furunculosis, septicemia, influenza, pneumonia, broncho-pneumonia, rheumatisms, and so forth, have permitted us to conclude that every patient which had an hypodermic reaction less marked and small, with pus containing a number of phagocytes inferior to that of the other white corpuscles, or a secondary abscess as marked as the first, with a tendency to ulceration of the primary abscess, was a patient whose condition was very low and for which a fatal prognosis was to be given.

In relation to the therapeutic application, the effects that have been obtained so far seem to have been very encouraging; but yet demand further investigation.

For the present, then, two important practical points are gained, viz.: the detection of the germs circulating in the blood of an infected individual and the possibility of establishing in a rational manner the prognosis of the ailment.

* * *

THE COMMON METHOD OF INFECTION IN TUBERCULOSIS.—Our English contemporaries, the *Journal of Comparative Pathology and Therapeutics* and the *Veterinary News*, have published lately on this interesting question, an address from Sir John McFadyean, who, everyone knows, is an authority on any question

relating to tuberculosis; where after considering some generalities of secondary importance, such as the direct introduction of the bacilli into the skin, the subcutaneous tissue, genital entrance and so forth—he states that, leaving aside those possible tracts of infection, upon which no discussion exists, the matter in dispute is narrowed down to the question of the relative frequency of infection by inhalation and infection by ingestion. These modes of infection being indeed the most important and both having their advocates, the solution of the problem rests on this point, viz.: "What is the path of entrance of the bacilli in cases of primary intrathoracic tuberculosis?" It is on that point that the opinion is mainly divided.

"Indeed," writes Sir John, "for those who favor inhalation as the common natural method of infection, the case may be briefly stated as follows: In both species (human and bovine) the commonest seats of the primary lesions are the lungs and the bronchial glands, and it is a reasonable deduction from this localization of the primary lesions within the thorax, that the bacilli which determined those lesions, gained the pulmonary tissue with the inspired air. *A priori,* this explanation of the origin of primary intrathoracic lesions is to be preferred to any other, because it is the simplest."

This view is confirmed by the results of experiments, which show: that when susceptible animals are caused to inhale tubercle bacilli, the primary lesions develop within the thorax and that primary intrathoracic lesions cannot readily be set up by causing animals to swallow tubercle bacilli or by infection through any other channel than the air passages.

To those reasons, the advocates of the infection by ingestion answer that "experimental infection has been proved more certain when the bacilli were swallowed than when they were inhaled, and that in cases of experimental tuberculosis set up by feeding the primary lesions are frequently and generally intrathoracic." Again, "that the occurrence of such primary lesions in natural or experimental cases of tuberculosis, resulting from the ingestion of bacilli is explained by supposing that the bacilli

which reach the intestines may, after absorption into the lymphatic vessels, be carried rapidly through the bowel wall, and mesenteric glands and then gain the lung tissue by way of the thoracic duct" and finally that "it is difficult or impossible to determine tuberculosis, with lesions primary intrathoracic by causing animals to inhale tubercle bacilli."

This concise, but complete résumé of the conclusions supporting the two methods of infection of tuberculosis present the question fully to the readers and now Sir John enters into the solid part of his article.

* * *

To come to a solution of this important problem, three heads have to be taken into consideration: 1. What is the most common seat of the primary lesions? 2. The relative ease with which animals may be experimentally infected by causing them to inhale or to swallow tubercle bacilli, and the distribution of the lesions in animals so infected, and 3. The results of experimental attempts to introduce minute inanimate particles, such as carbon, carmine, etc., into the lungs by inhalation or ingestion; that is, to obtain pulmonary anthracosis.

Sir John McFadyean gives to these set of evidences a careful review, relates many of the experiments which brought their weight in favor and against, and after considering and criticizing the work and conclusions derived from the investigations of Koch, von Behring, Calmette and Guerin, those of the Royal Commission on Tuberculosis, also the articles of Findel and Reichenbach and again of Vansteenbergh, and Grysez, of Kurtz and Lobstein, Arloing and Forgeot, etc., etc., the author ends his address by the following conclusions which résumé the entire question and seem to be justified after such a complete review of all the available evidence:

"1. The inhalation of tubercle bacilli suspended in the atmosphere is a very certain method of infection in susceptible animals even when small doses of bacilli are employed.

"2. Experimental infection with tubercle bacilli by way of the alimentary canal is comparatively difficult to realize even in highly susceptible animals, and success is certain only when very large doses of bacilli are administered.

"3. With few exceptions, in animals experimentally infected with tuberculosis by way of the intestine the primary lesions are intra-abdonimal, and the intrathoracic lesions when present are secondary.

"4. Inhalation is probably the commonest natural method of infection in those species (man and cattle) in which the primary lesions of tuberculosis are usually intrathoracic.

"5. Naturally contracted cases of tuberculosis in man and other mammals can be ascribed to infection by ingestion only when the lesions revealed at the post-mortem examination are confined to the abdomen, or when the existing abdominal lesions are recognizably older than those present elsewhere in the body."

As an addition to his endorsing these conclusions, Sir John adds: "In formulating these conclusions I have endeavored to evade the reproach to which Calmette and his supporters have laid themselves open, viz.: that of drawing far-reaching inferences from a small number of experiments, and assuming that the results obtained in animals under the conditions realizable in experiments may be immediately applied to explain the method of infection in cases of natural tuberculosis in man. That is why the word 'probably' has been introduced into the fourth of the conclusions. The whole of the experimental evidence on which the theory of the intestinal origin of pulmonary tuberculosis in man was built up has been swept away, and valuable new support has been provided for the older inhalation theory, but one ought to avoid the mistake of denying any importance to infection by ingestion either in man or in cattle, or of asserting that tubercle bacilli which enter the body by way of the alimentary canal are never the cause of tuberculosis with lesions apparently primary in the lungs."

* * *

ADRENALIN AND MALIGNANT TUMORS.—German papers have reproduced a series of experiments carried out by Professor Reicher relating to the use of adrenalin in the treatment of malignant tumors. The learned professor made subcutaneous injections of adrenalin in the tissues surrounding, in rats sarcomatous growths, and in mice carcinomatous. In a lapse of time varying between three and four weeks, he observed that the tumors had considerably reduced in size and represented merely necrotic remains, as big as a bean or even a small pea.

Besides, when after the inoculation of a malignant tumor, the animals were, previous to the development of the neoplasm, treated with adrenalin, the percentage of the animals in which the inoculation was positive, was much lower than among the controlling animals. For instance, in a series of controls inoculated with sarcomas after three weeks, he had obtained four tumors as big as a hen's egg, two as big as a nut and three negative results; while in a series treated with adrenalin, in the same length of time, there was obtained only one tumor as big as a French nut, eight as big as a hazelnut and ten were negative in their results. During the fourth week of this last series the tumor retroceeded.

Still more satisfactory results were obtained with inoculations made in series of carcinomas.

By opposition, however, the preventive inoculation of adrenalin, or that made at the same time as the neoplastic inoculation, has given no favorable results.

At the microscopic examination the development of a centre of necrosis was found in the middle of the neoplasm, without any inflammation. When the necrosis has spread, one will observe on the periphery a zone of infiltration of microcytes and a vascular dilatation.

Adrenalin promotes the constriction of the blood vessels and it can be supposed that it thus reduces the nutrition of the tumor. In fact the retrocession of the growth seems to be so much marked that its development, subsequent to a peculiarly intense nutrition, has itself been more rapid.

These experiments might find their practical application in veterinary surgery in cases of malignant tumors of small animals, which for one reason or another could not be treated by surgical interference.

* * *

BIBLIOGRAPHIC ITEMS.—This month they will consist in acknowledging the receipt of "Bulletin 120 of the Bureau of Animal Industry, on the Bacteriology of Commercially Pasteurized and Raw Market Milk," by S. Henry Ayers and William T. Johnson, Jr.; of "Sporothrix and Epizootic Lymphangitis," by C. G. Page, M.D.; Langdon Frothingham, M.D.V., and James B. Paige, B.Sc., D.V.S., and a report of the Montana State Live Stock Sanitary Board and State Veterinarian, by Dr. M. E. Knowles, and circular 165 from the Bureau on "Methods for the Eradication of Gid," by Maurice C. Hall, of the Zoological Division.

A. L.

VOLUME THIRTY-NINE.

This number of the REVIEW reaches its readers with the twittering of the birds and the budding of the trees; *i. e.*, the opening of spring; the season filled with the hopes and promises of the entire year, when all nature rejoices. With the REVIEW it is the opening of a new volume; and surely one that promises much to the profession it aims to serve. With this number, among many other things of unusual merit by some of the foremost men in the profession, a series of articles is begun by Professor D. E. Salmon, Director of the Veterinary School at Montevideo, and a serial article by Dr. Schwarzkopf, of the United States Army, as well as a *continuation* in the succeeding numbers of this volume of the valuable contributions from the pen of our esteemed collaborator, Dr. D. Arthur Hughes. These articles are of unusual

interest to the profession, and no veterinarian in America can afford not to read them.

And while all nature rejoices at the coming of spring, the veterinarians of America are rejoicing at the accomplishments of the committee on Army Veterinary Legislation through its chairman, Dr. J. P. Turner, whose indefatigable efforts in that capacity for years, have at last been rewarded. Dr. Turner very modestly accepts only a *share* of the credit for this great work, in his report in the Army Veterinary Department on page 76, this number; but Dr. Schwarzkopf declares that *all* the credit should be accorded to Chairman Turner.

Before closing our remarks on volume XXXIX., we desire to thank our readers, whose subscriptions begin with this volume, for their prompt and *direct* renewals and their very hearty appreciation and support. Some *few,* despite our several warnings from time to time, have again become victims of some unprincipled person who is using the REVIEW's popularity with the veterinary profession as a means of obtaining money from them fraudulently. This man takes subscriptions and gives receipts to his victims, but never turns his subscriptions in to the publishers, who do not know of the incident until the receipt of a letter from the one who has been fleeced, usually some months later, when he has become tired from waiting for his numbers. We regret the circumstance, both for those that are victimized and on our own account, as doubtless there are instances where new men, who do not chance to know of the reliability of the REVIEW, think *we* have defrauded them, and never give us a chance to explain. We can only repeat our old warning: Do not give any wandering agent your money; the REVIEW neither authorizes nor recognizes any subscriptions taken below the publisher's price, either alone or clubbed with any other paper. Send your subscriptions *direct* to the REVIEW office and the numbers will be promptly forwarded.

We have just learned through the Chinosol Co., that Dr. Metheny will positively discontinue the sale of Methenysol. See page 110.

ORIGINAL ARTICLES.

ARSENICAL POISONING FROM SMELTER SMOKE IN DEER LODGE VALLEY, MONTANA.

By D. E. Salmon, D.V.M., Montevideo, Uruguay, S. A.

Introduction.

The poisoning of live stock in the Deer Lodge Valley, Montana, by arsenic deposited from the smoke of the Washoe smelter has been and still is of much interest to the veterinarians of the United States because of the contributions which the scientific investigations conducted there have made to the subject of veterinary toxicology, and, also, because of the radical difference in the testimony of the experts employed by the Farmers' Association, on the one side, and those by the smelter company, on the other. This difference of opinion within the profession makes apparent the necessity for a revision of our knowledge of arsenical poisoning, and especially of the chronic form of this intoxication, in order that we may obtain more definite ideas in regard to the facts upon which a diagnosis in such cases must be based.

The experience of the veterinarians employed as experts in this case, emphasizes the importance of the expert having a comprehensive conception, at the beginning of his investigations, of the ramifications which the inquiry may take and of the facts which he will need to establish his diagnosis. The character of the examination to which the experts were subjected, also, shows that the veterinarian may, under certain circumstances, be expected to present stronger proofs of poisoning than have heretofore been required in human toxicology where the life of the

accused is at stake; and, therefore, he must be well prepared, not only by his own observations, but by an exact knowledge of the investigations of others. In order that he may thus prepare himself, the results of investigations and observations must be collected, classified and compared; and if there are, still, some elementary facts upon which we are not agreed, it would appear extremely desirable to begin at once to collect data and to make investigations that will remove all doubts, for no one knows when he will be called upon to give testimony in such a suit.

The importance of this case to the parties to the suit could only be fully appreciated by going over the ground, talking with the farmers, observing their live stock for a considerable period of time, and seeing the sacrifices which they and their families were making in order that they might save money for the necessary expenses of the litigation. Where, as in this case, not only the live stock, but the homes, and the very means of existence of over a hundred families are at stake, the responsibility of the expert is tremendous and he should endeavor to avail himself of all the facts which science has acquired for the elucidation of the subject.

As one of the experts employed by the Farmers' Association, the writer visited the valley twice and made a considerable number of autopsies, a few on animals which had died, but the greater part on animals which were sacrificed for the purpose of investigation. He had the opportunity of consulting and cooperating with Professors R. E. Swain and W. D. Harkins, the chemists who investigated on behalf of the farmers; he received valuable information from Dr. M. E. Knowles, State Veterinarian of Montana; and in making his autopsies and conducting his experiments he had the constant assistance for about six months of Dr. A. H. Cheney, whose untiring industry and knowledge of the local conditions proved to be of great value.

This work was done while the suit against the smelter company was in progress and when it was known that the allegation that the animals were poisoned would be contested from every possible point of view, but, of course, the nature of the

defense could not be foreseen, and proved to be in some respects a surprise. The writer continued his investigations until he had obtained sufficient data to make what he believed to be a perfectly secure diagnosis, but the assistance which he was able to obtain from an examination of available literature was unsatisfactory, and this inadequacy made it necessary to conduct a number of experiments for the purpose of supplying the deficiencies. It is surprising, in view of the poisoning which has been known for many years as occurring from the smoke of European smelters, that our text-books do not give us a clearer idea of the minimum dose of arsenic which will produce toxic effects when repeated daily for several weeks or months, nor a clear and definite description of the gross and microscopic lesions which develop as a result of chronic arsenical intoxication. So serious do these deficiencies appear to the writer, and so difficult is the veterinary expert's task in such cases, that an attempt will be made in this series of papers to give a sufficiently detailed statement of the conditions which were found to exist in the Deer Lodge Valley, and the data which has been gathered from various sources, to give the reader a comprehensive idea of the question as a whole and, also, of the more important subsidiary problems which presented themselves for solution.

Descriptive and Historical Data.

The Deer Lodge Valley, Montana, is situated to the north and west of Butte, and northerly and easterly from Anaconda. The altitude is over 5,000 feet. It lies between two ranges of the Rocky Mountains, is well watered by many mountain streams flowing in from both sides, is fertile, level and easily irrigated. It is about forty miles long and has an average width, according to Judge Hunt, of about ten miles (1), but in the part most affected by the smoke the average is probably less than five miles. The drainage is by the Deer Lodge River, which runs near the centre of the valley and receives the waters of the various mountain creeks that furnish an unfailing supply for the irrigating ditches.

The valley was settled by brave and enterprising pioneers, a part of that army of civilization which opened up the vast region of the plains and Rocky Mountains, making fertile and productive farms in what had hitherto been considered a desert, living lives of hardship and privation, and being constantly menaced by hordes of merciless savages. The first families arrived as long ago as 1864, and these were annually joined by others until the valley became well settled. As the danger from Indians diminished, comfortable homes were established, the flocks and herds became larger, irrigation was practiced on a more extensive scale, fences were built, hay was cut in large quantities and diversified farming became common. The outlying hills and mountains furnished an abundance of summer range for the stock, the irrigated valley produced with certainty good crops of hay, grain and vegetables, and the toil, privation and danger of the early days were succeeded by ever-increasing comfort and prosperity.

In 1883 a corporation styled the Anaconda Mining Company began the construction of a smelter on the north side of the Warm Springs Valley, at a point about a mile in a northerly direction from the present Washoe smelter. The Warm Springs Valley, it should be explained, is a narrow valley which makes off into the mountains at nearly a right angle from the Deer Lodge Valley, not far from the head of the latter, and was chosen as a location for the reduction works because of the large quantity of water available at that point. These works began operations in 1884, and continued down to the year 1895, when they were transferred to the Anaconda Copper Mining Company, a defendant in this suit (2).

This latter company determined to construct a new smelting plant upon more modern and economical lines, and for that purpose selected the present site of the Washoe smelter, which is located on the opposite side of the Warm Springs Valley from the old works and near the extremity of a mountain range which divides the Warm Springs from the Mill Creek Valley and terminates on the western margin of the south end of the Deer Lodge

Valley. The erection of the Washoe smelter required several years' time and it is alleged that about $9,500,000 were expended upon its construction.

Smelting operations at the new works were begun in January, 1902, with short chimneys, *i. e.*, with four stacks 225 feet in height, constructed on the same level as the smelter. In July of that year cattle began dying in Mill Creek Valley, and soon afterwards in the Deer Lodge Valley. It was at this time that ulcers were first observed in the nostrils of horses running on pasture in the Deer Lodge Valley. The conditions became rapidly worse and during the ensuing six months a large amount of live stock, horses, cattle and sheep, was poisoned. Professors Harkins and Swain, in one of their papers on smelter smoke say:

"During the latter part of November, 1902, it was the fortune of one of us to travel over about one hundred square miles of the territory surrounding the new Washoe smelter at Anaconda. At that time the carcasses of several hundred animals that had recently died lay scattered over various ranches of the valley, and one ranch was visited where approximately sixty carcases, mostly horses, were seen in a group in one corner of the field. A very large number of the animals were dissected, and practically all of them gave evidence of arsenical poisoning, either acute of chronic" (3).

During the month of November, the losses seem to have reached their maximum, and were so alarming that all the farmers who could do so, drove or shipped their stock out of the valley, while that which was retained was put up and fed upon hay. By the spring of 1903, nearly every one had sold the greater part of his stock that had not previously been too severely poisoned to go upon the market.

Naturally, very vigorous complaints were made by the farmers when they found that these extensive losses were due to poisoning by arsenic deposited upon the grass from the smoke that escaped from the smelter; and claims for damages aggregating several hundreds of thousands of dollars were presented to the Anaconda Copper Mining Company, which was a defendant

in the suit afterwards brought by the farmers. This company, by its representatives, investigated these claims, admitted that the stock had been poisoned by arsenic deposited from the smelter smoke and made settlements with the injured parties, paying out in all on this account more than $330,000 (4).

This was the first poisoning from smelter smoke, so far as known, which had occurred in that locality, and the results were so serious that an investigation was made to determine what methods could be adopted to prevent continuous damage and avoid further claims of this nature. As the result of this investigation, it appears that a plan was evolved for constructing large flues with dust chambers to collect the solid particles so far as possible, and to erect an enormous stack on an elevation at some distance from the smelting plant, with the alleged object that the poisonous fumes which escaped into the atmosphere might be discharged at so high an elevation that they would be diluted and disseminated to such an extent before reaching the ground that they would no longer cause damage.

The construction of the new stack and connecting flues was commenced in February and completed in September, 1903. The stack is 300 feet high with an internal diameter at the bottom of 31.33 feet and at the top of thirty feet; and it reaches an altitude of 1,100 feet above the valley. There are two parallel flues running from the base of the chimney toward the smelter plant for a distance of about a thousand feet, each flue being sixty feet in width with twenty-foot side walls. This double flue is continued by a section 1,300 feet in length of single flue sixty feet in width and with twenty-foot side walls, which at the end farthest from the stack is connected by separate flues and dust chambers with the reverberatory, the blast furnaces, the roaster building and the converter plant respectively. Of these connecting flues, that leading to the blast furnace is 1,653 feet in length; that to the reverberatory 842 feet; that to the roaster 488 feet, and that to the converter 703 feet. The first three of these flues are twenty feet high and twenty feet wide; while the fourth is eighteen feet wide and ten feet high.

In addition to these flues, a number of settling chambers were constructed. The blast furnace and reverberatory dust chambers were each 250 feet long; the converter chamber 260 feet long, and the roaster dust chamber 290 feet long. All of these were forty feet wide and forty feet high.

Under the long single flue and the double flues, there is an excavation fifteen feet in depth in which a railroad has been constructed, and the bottom of the flues is sloped from both sides into hoppers, which are so arranged that by pulling a lever a valve at the bottom opens, and the accumulated dust flows directly into the cars which are placed beneath to receive it.

An arsenic plant was also constructed containing three furnaces with a capacity of about ten tons each, but the quantity of arsenic actually separated did not exceed two tons a day.

Did these improvements in the smelter plan so modify the composition of the smoke and the manner of its discharge that arsenic was no longer deposited in injurious quantities upon the pastures and hay fields of the valley? The company claimed that they did accomplish this purpose, and denied that since 1903 any injury of any kind whatsoever had been done to the property of any one in the Deer Lodge Valley. The farmers, on the other hand, contended that while the high stack had modified conditions somewhat by disseminating the arsenic over a wider area, thus reducing the number of cases of acute poisoning, there was still enormous quantities of this poison deposited on the pastures and hay, sufficient to cause some cases of acute poisoning and to develop in other animals a chronic intoxication which damaged practically all of their animals and rendered a large proportion of them worthless.

Acting upon this belief, about one hundred of the farmers and residents of the "smoke zone" of the Deer Lodge Valley, representing an ownership of over 50,000 acres of land, formed an association during the latter part of the year 1904, for the purpose of acting together in the effort to obtain relief from the alleged general and widespread damage resulting from the operations of the Washoe smelter. Having failed in an attempt to

reach a settlement by mutual agreement or arbitration, a suit was brought for a permanent injunction restraining the defendants from operating the smelter and from treating ores described as containing poisonous and deleterious substances, on the ground that stock raising or farming cannot be carried on within the smoke infected portion of the Deer Lodge Valley as long as smelting operations, as at present conducted, continue. It is readily seen how important it was to the farmers' case to show that their animals were suffering from arsenical poisoning, and how important it was to the case of the smelter company to contest this evidence, hence, the prominence of the veterinary expert and his testimony.

For reasons which it is not necessary to specify, the suit was brought in the name of Fred J. Bliss, a resident and citizen of Idaho, who owned a tract of land situated about five miles in a northeasterly direction from the smelter. To give some idea of the difficulty, as well as the time and money, required to bring a suit against this great corporation to a final issue, the following facts are cited from the "Opinion" delivered by Judge Hunt, of the United States Circuit Court:

The suit was instituted May 4, 1905, and the Court, against the objection of the complainant, on December 18, 1905, referred the cause to the standing Master in Chancery, with directions to take the testimony and to find the material facts, and report the same to the court. The taking of testimony commenced on January 15, 1906, and was not concluded until about March 20, 1907. Two hundred and thirty-seven witnesses testified, and their testimony fills over 25,000 large type-written pages Among the experts were professors of chemistry, agriculture, botany, veterinary science and comparative pathology. More than 800 exhibits accompanied the record, consisting of anatomical specimens, microscopic slides, flue dust, botanical specimens and hundreds of photographs.

The testimony of the witnesses for the complainant and of those for the defendants was very contradictory both as to facts and conclusions, and these contradictions were by no means con-

fined to the lay witnesses. Some of the most glaring discrepancies are to be found in the testimony with reference to the symptoms and post-mortem appearances presented by the animals, the historical changes existing in important organs, the signification of symptoms and lesions, and the effect of arsenic upon animal life.

Whatever may be said as to contradictions in the professional testimony, it is certain that the Deer Lodge Valley afforded one of the best opportunities which has ever come to the veterinary profession for studying the effect of arsenic upon farm animals. The investigations of Sussdorf, Freytag and Haubner have attracted much attention, but the two smelters, the Mülden and Halsbräcken, at Freiburg, in 1870, only treated about seventy tons of ore daily; while all the smelters of the Lower Hartz used but 63,000 tons during the year 1899. Comparing these quantities with the 7,000 or 8,000 tons daily treated by the Washoe smelter, it is possible to more thoroughly appreciate the magnitude of the operations of this, the world's greatest smelter, and to estimate with greater precision the far-reaching effects which its emanations may have upon vegetation and upon the health of animals.

---

(1) Judge William H. Hunt. Opinion. In the Circuit Court of the United States, Ninth Circuit, District of Montana, page 8.

(2) Loc. cit., pages 8-10.

(3) W. D. Harkins and R. E. Swain. The Chronic Arsenical Poisoning of Herbivorous Animals. *Journal of the American Chemical Society*, XXX, No. 6, June, 1908, p. 928.

(4) Judge William H. Hunt, Loc. cit., page 10.

Under date of March 11th, Dr. E. F. Jarrel, of Fort Worth, Texas, says: "Enclosed find my check for three dollars to pay my subscription to the REVIEW. I consider this money well spent. We have just succeeded in having a veterinary law pass both houses of our State Legislature, and is now up to the Governor for his signature, which we have every reason to believe he will sign."

It is the earnest prayer of the REVIEW that the Governor of Texas signs the bill.

THE PROBLEM OF A UNIFORM VETERINARY DEGREE FROM THE STANDPOINT OF HISTORICAL DEVELOPMENT AND AMERICAN NEEDS.

By Olof Schwartzkopf, Veterinarian Third Cavalry, U. S. Army.

Dr. Glover's timely and persistent efforts to bring to the front the question of uniform degrees and matriculation requirements for our veterinary colleges should be heartily commended. It is certain that these two problems will have to be solved soon, if professional veterinary advancement on this continent is to continue in fact and not merely in name.

The matriculation requirements recommended by him equal those generally demanded for graduation from a high school. They are simple and complete as far as suggestion can go. Many of us will consider them rather modest, but they are a step forward towards acquiring the degree of A.B. This must be our goal if we wish not merely to boast that we are a learned profession but desire to become such in reality by reason of an unassailable educational standard, preparatory and professional.

Dr. Glover is not so positive in suggestion about the solution of the second problem, that of a uniform veterinary degree. The recommendations he makes leave one in doubt as to what he reallly desires to see accomplished. He is correct in pointing out the absurdity of our various veterinary degrees and the mischief they cause in our practical lives. This is more or less understood and acknowledged by every thoughtful veterinarian, our broad land over. I have heard it adversely commented upon in the far-off Philippines and in Japan. Our colleagues in

*Written for the American Veterinary Review.—April, 1911.

Europe consider our numerous degrees a mystery, if they express themselves politely. It is a foolish situation in which we have put ourselves, but we continue to endure it because we have been too obstinate in the past to change, to correct, to accept or abandon, as the case may be.

The choice of a correct and uniform veterinary degree is not difficult. If we thoroughly go into its origin and evolution it comes to us almost by itself. We, in America, have not constructed the first veterinary degree, but we have invented faulty synonyms. To correct the wrong we must go back to proper precedent, and this fact we found out already some years ago. Perhaps Dr. Glover may not know, and surely many other younger veterinarians do not know, that this subject has been under fire once before, in 1894 and 1895, during the first two years of the existence of the Association of Veterinary Faculties. I beg of him to let me help him out and to sustain him, because I had the pleasure of being the first secretary of this Association and remember well the tenor of the discussions held. At that time the choice of a degree seemed quite possible, but its adaptation by the different colleges proved to be insurmountable. Our colleges were then in bad humor and some of them were on the edge of collapse because times were hard. They feared that we wanted to interfere with their liberties and privileges. They wanted states' rights, so to speak. Fifteen years have elapsed since, during which time the same colleges have become more liberal, more charitable toward each other, more willing to compromise and to accept outside wishes. Note the adoption of the entrance requirements prescribed by the Department of Agriculture.

No better birth-day gift could be presented to the Fiftieth Anniversary of the American Veterinary Medical Association and the whole profession, which practically dates from this time, than the adoption of a uniform veterinary degree by our colleges. It would be a fine testimony of an amicable adjustment among these institutions which we properly call our own because they mold into shape the coming generations of our professional

successors. It would be a sign of real progress of our affairs outside of our scientific advancement.

By all means let us try the issue again, this time with more skill and friendliness, and with more confidence of success. Times are now good, our colleges have been blessed with plentiful remuneration, and they will no longer suspect force or usurpation in so small a matter as involves a change of their degree. Most of these are of comparatively recent adaptation, and in years to come a change must entail much greater annoyance than it will at the present time. Now let us examine the question thoroughly.

THE LATIN ORIGIN OF OUR VETERINARY TITLES AND DEGREES.

Roman writers variously name the domestic animals: Animalia, veterinaria, veterina or pecudes, and they were classified by Plinius as belonging to the genus veterinum. In early Roman writings the veterinarian was referred to as "mulomedicus or equarius medicus" if he treated horses and mules only. "Medicina equorum" was used in the same sense as our modern equine medicine. Columella, the foremost writer on agriculture of a later period (forty years after Christ) applies first the term "medicina veterinaria" as signifying veterinary medicine in general, and "veterinarius" as the expert who treats the diseases of domestic animals. About 100 years after Christ mention is first made of veterinary hospitals in the Roman army and they were tersely called "veterinaria." Vegetius Renatus, of the fourth century, the most renowned Roman veterinarian, entitles his book, "Artis veterinariæ sive mulomedicinæ libri quatuor (four books on the veterinary art *or* mule medicine), and he treats of medicine, surgery, obstetrics and breeding combined. Somewhat later the "hippiatrica" of Apsyrtus, written in Greek about 350 years after Christ, was translated by Roman writers as "Apsyrti Veterinaria" and it comprised the medical and surgical treatment and the exterior and breeds of the horse.

From these examples of Latin usage we must judge that the terms "medicina veterinaria or ars veterinaria" were applied to

mean *all the branches of our science and practice,* and that the brief "veterinarius" was used by our Roman predecessors as their rightful *title.* They were accepted and used by all subsequent writers on veterinary medicine until the collapse of the Roman Empire. The tremendous upheaval among the peoples of Europe brought about by this event, completely destroyed Roman culture. The Latin language survived as a world language, but the arts and sciences, including veterinary medicine, were practically lost and with them the Latin technical terms that had become fixed by evolution. These were superseded by new terms or titles indigenous to the languages of France, Great Britain, Germany and other countries.

France led in this change, which took place in the early middle ages (ninth and tenth centuries). Veterinary medicine completely reverted to ancient customs and split again into several branches. The herdsman, thoroughly superstitious and using mostly mystic formulæ for cure, became again the cattle and sheep doctor, while the invention and general acceptance of horse-shoeing about that time made the ancient blacksmith the "ferrour or ferrier," and he became the horse-doctor of the poorer classes of people. He, too, was strictly under the ban of mysticism. The higher position of the former Roman veterinarius was filled by the more educated and talented riding master who had rapidly come to the front in this era, and in whom the aristocracy showed implicit faith in all knowledge that pertained to the horse. They were given the title "maréchal" (from the Celtic marescalk). Maréchalerie comprised the art of riding, the exterior, breeds, horse-shoeing, lameness, and the treatment of the ordinary diseases and blemishes of the horse. The masters of the riding schools have left us many beautifully illustrated and costly books, and their influence upon their age has been so great that in the history of veterinary medicine a time extending over several hundreds of years is classed as "the period of the riding masters."

These French titles were gradually accepted in other countries, only somewhat changed. In Latin Italy the word

marescalcus replaced that of veterinarius, and marescalchena that of equine medicine. Great Britain adopted the French ferrour, changing it into farrier or ferrer. Here "farriery," originally comprising only the trade of horse-shoeing, soon assumed the treatment of the diseases of the horse as they were then known, principally operations on the hoof, bleeding, firing, blistering. St. Eloy was the patron saint of the farriers of Ireland and was often appealed to for help. In Germany the word Kurschmied (a smith who cures) came into existence and his acknowledged status was the same as that of the ferrier in France and the farrier of England.

The various terms and titles, here explained, plainly indicate the confused and lowly condition into which our science had fallen during the middle ages, right up to the time of the establishment of the first veterinary schools in Europe.

The Origin and Development of the Degree of Doctor.

We must now revert somewhat to trace the development of the other sciences, which suffered likewise during the middle ages. As early as 802 Emperor Charles the Great had founded, at Salerno, a school of medicine in order to save that science from utter extinction. The progress of the school was very slow and it was not until the middle of the eleventh century that it prospered and became famous. In 1160 a school of law had been founded in Bologna, and in 1205 a school of theology in Paris, both of which institutions grew and finally developed into universities that served as models for all others that followed. The professional faculties connected with these early universities were those of divinity, law, medicine and the arts, the latter merely preliminary to the others. The courses were long and tedious. The students were examined for certain *grades* of *progress* for which they received the *initial academic rank or degree of bachelor* or *licentiate,* followed years later by the *final* and *highest degree of master* (magister) *or doctor.* The initial degrees were conferred by the faculty, the final by the chancellor

of the university on authority of the Pope. The two last degrees carried with them the right to teach their profession along with other privileges and civil rights similar to those enjoyed by the nobility of the land. A doctor of divinity, law or medicine was *ex ipso* a high dignitary.

But there were only comparatively few men who obtained the degree of doctor medicinæ at that time. The university course, preparatory and professional, was costly and of such a long duration that young men seldom graduated before they had reached the age of thirty or thirty-five years, when they generally started into public careers. Yet, the ordinary people needed medical attendance and their want was supplied by a lower class of general practitioners. The French coined for them the title of "Chirurgien" (from the Greek). The Germans adopted it as chirurg or wundarzt (one who heals wounds), and it was imported into early English language as chirurgeon, from which by contraction resulted the present title surgeon.

The surgeon had not the degree of doctor medicinæ. He was generally recruited from the guild of barbers and acquired his knowledge and skill as a pupil and assistant to an older practitioner. His practice consisted mainly of manual treatment, such as bleeding, cupping, setting of broken limbs, treatment of injuries, extraction of teeth and the like. He was also given the right to dispense medicines and at a later period was called, in Great Britain, a surgeon apothecary. In rank he was distinctly below that of a physician who was considered a scholar and gentleman because he was a doctor medicinæ. Physicians prescribed medicine, but it was below their dignity to dispense them. They were the doctors of the higher classes of people, of kings and emperors, who often bestowed upon them high titles and honors. Among them, also, were men who pursued scientific research and the discoveries of Vesal (1540), Fallopia (1560), Eustachio (1620), Harvey (1630), Sydenham (1708), and others of that period are known to every veterinarian. The practicing surgeon, poorly educated as he was, did not contribute to scientific knowledge.

The Titles Awarded by the Early and Later Veterinary Schools of Europe.

If we now fully understand the condition of medicine and veterinary medicine of that time, that is, the division of medicine into a scientific branch occupied by the scholarly physician, and into a lower, manual branch filled by the practicing surgeon, as also the condition of veterinary practice which was entirely in the hands of the empiric farrier, one cannot wonder that the early veterinary schools did not confer the doctor degree upon their graduates. They were powerless to do so, because they were constituted only as a limited technical *school, teaching one profession only, and not a university,* endowed with privileges and power by the laws of the land or the will of a king. Then, too, the pupils of the early veterinary schools of Europe, like our own, were young men of ordinary education, not fit for higher mental study. Like the surgeons, who were recruited from the barbers or sons of barbers, so came the first veterinarians from the farriers or sons of farriers, seeking entrance into the veterinary schools to better their standing in the eyes of the world, but they knew well that they could never enter a university.

France.—The first veterinary schools of history, that of Lyon, founded in 1762, and that of Alfort, founded in 1766, show this condition plainly. Their founder, the renowned Bourgelat, the first veterinary professor chronicled, was a man of high education, possessed of energy, and well connected in government circles. This enabled him to have the first veterinary schools quite well endowed financially, and all he needed for success were capable pupils. He wanted them to be real students, but instead those that were sent to attend the school from the homeland and from numerous foreign countries, were farriers from the army and farriers from civil life. Although he fought this very condition, the opinion of his adversary Lafosse, of the government and public opinion generally seemed to be that such pupils were the most apt to become veterinary practitioners. No

one thought then that *veterinary art* was a science also, and no one intended to put the newly born veterinarian on an equal footing with that of the learned priest, judge or physician. Without pretence he was turned out into his life work for what he really was, a trained empiric, in testimony whereof he received from the school a certificate acknowledging his "approbation de maréchal veterinaire."

After three or four decades of experience with these graduates, it dawned upon the government and those interested, that veterinarians so poorly educated did not give the desired satisfaction. A reorganization of the schools took place, changing the government supervision, improving the teaching faculties and initiating the teaching of two classes of veterinarians—one of ordinary pre-education and predominant practical training (maréchal veterinaire), and the other a higher class with academic pre-education and of a more scientific mold, which in contradistinction to the first, received the title of "médicine veterinaire." To illustrate the practical result of this division, it may be cited that on January 15, 1813, the Emperor Napoleon I. decreed that each army corps should be provided with one médicine vétérinaire with the rank of adjutant (a commissioned officer) and each regiment of cavalry and artillery with three maréchant veterinaires with the charge of sous-officier (sergeant).

This system of twofold education of veterinarians continued in vogue until 1824, when the lower grade of study was abandoned and only the higher course continued. Periodically this was made stronger and more severe until it reached its present exemplary standard.

The French government veterinary schools were never affiliated with universities, but remained separate institutions, which fact sufficiently explains that they did not grant a doctor degree, but still confer the unpretentious title as médicine veterinaire, and the graduates are not addressed as doctor. In 1909, however, the veterinary schools petitioned the proper government resort to grant them the right to confer the degree of doctor of

veterinary medicine upon graduates who continue to study and perform research work of merit, and it is only a question of time when this just appeal will be complied with.

Great Britain.—The wave establishing veterinary schools, starting from France throughout the old world, was carried to Great Britain by Vial de Saint Bel, a pupil of the veterinary school at Lyon. On his recommendation the Royal Agricultural Society of London raised the necessary funds to start such a school, and it was opened in 1791 under the name of "The Royal Veterinary College, London." Unlike in France, the government of Great Britain did not assist this new college financially, but its maintenance was largely left to the private enterprise of St. Bel and his assistants. Naturally, the institution itself, as well as the instruction, was modelled after the French pattern, but in 1793 Edward Coleman became its principal, who was an exceptionally capable and resourceful man, and he soon improved the college in many new ways. The original title given to the graduates was simply the English term "veterinary surgeon" (V.S.), which remained in vogue for more than four decades. At that time the college had developed into a meritorious institution, all through the good ethics and economics practiced by the successive principals: Coleman, Sewell, Robertson and the Professors Axe, Brown and others, and a charter was secured from the crown which created the "Royal College of Veterinary Surgeons." From this time on the graduates received the "membership diploma" of the Royal College of Veterinary Surgeons (also termed degree), abbreviated M.R.C.V.S. This diploma carries with it the legal right to practice veterinary medicine throughout Great Britain and the colonies.

But our British colleagues were bent on "advancing with the times or cause the times to advance" as they said, and in 1876 the council of the Royal College of Veterinary Surgeons obtained powers by supplemental charter granted by the late Queen Victoria, to create a higher degree than that of membership, to be entitled "Fellowship," for the purpose of "advancement of veterinary science." This degree can only be acquired after

five years of practice as a graduate veterinarian. The candidate must be of good professional standing and write and defend a thesis on a scientific subject of veterinary medicine. The fellowship degree opens the way to higher public positions in state and municipal veterinary medicine. The "*Honorary Fellowship,*" conferred now and then, without examination, upon British and foreign veterinarians of exceptional merit, is a liberal token of the veterinary institution of Great Britain.

The five veterinary colleges now existing at London, Edinburgh, Glasgow, Dublin and Liverpool, are affiliated and the same degree is conferred by all of them. The University of Liverpool, besides conferring the membership diploma of veterinary surgeons, has also instituted a post-graduate course in comparative pathology and bacteriology for officers of the army veterinary department and colonial veterinary surgeons, which qualifies for the examination of the university degree of doctor of veterinary hygiene (D.V.H.). The students of the Royal Veterinary College, London, have also the privilege to acquire the science degree (B.Sc.) of the University of London.

No purely veterinary degree has as yet been created by any university of Great Britain, but hope is expressed by the veterinary authorities, that the universities may be induced to grant the degree of "Bachelor of Veterinary Medicine" to those students who conform with their regulations, and that the degree of "Doctor of Veterinary Medicine" may be substituted for the fellowship degree in the near future; steps which are "bound to react with advantage upon the members of the veterinary profession themselves and the public they serve" (Professor McKendrick).

Germany and Austria.—Vienna opened its Royal Veterinary College in 1777 and Berlin in 1790, both under the auspices of their governments. These schools, too, were originally modelled after the French original, but they soon took quite different courses of development. For a number of years they were partly under control of their war departments, because they principally educated young men for the army service, but they matriculated

and graduated civil students as well. In 1802 the Austrian government created a precedent by affiliating the Royal Veterinary School with the University of Vienna, which resulted in raising the educational standard of veterinary students to the high level required of medical students.

The title conferred upon the graduates of the German and Austrian veterinary schools has always been the brief German word "Thierarzt" (veterinary physician), which is analogous to the title "Arzt" (physician) conferred upon graduates of medical faculties. These titles legally permit the holder to practice medicine or veterinary medicine or hold official positions in any of the different states of these two empires.

In 1820 the University of Vienna created another precedent by instituting the degree of "magister medicinæ veterinariæ" (mag. med. vet.), similar to that of doctor medicinæ, which is procurable only by veterinary graduates who write and publicly defend a thesis before the professors of the faculty.

In Germany proper the Royal veterinary schools at Berlin, Hanover, Dresden, Munich and Stuttgart, have always remained separate educational institutions. But there were numerous universities in the smaller kingdoms, dukedoms, etc., most anxious of improvement, and they created veterinary faculties in conjunction with their medical faculties: Göttingen in 1771; Freiburg, 1783; Marburg, 1789, Würzburg, 1791, each of them conferring the higher degree of doctor medicinæ veterinariæ upon veterinarians who conformed with their requirements. All of these veterinary faculties closed the doors during the Napoleonic wars, as professors and students took up arms in defense of their country, and they did not reopen after peace was restored in 1815, because the universities were poverty-stricken. However, in 1829 the University of Giessen reopened a veterinary faculty and re-established the degree of doctor medicinæ veterinariæ (abbreviated, Dr. Med. Vet.), which since has been conferred upon a multitude of German and foreign graduates, who had the ambition, time and means to undergo the special examination for this degree before the faculty of this university. Quite a

number of the renowned veterinary professors of Germany, Austria, Denmark and other countries hold the honorary degree, Dr. Med. Vet., H.C. (honoris causa), presented to them by this university in recognition of their services in the cause of international advancement of veterinary medicine.

In 1898 the German government exacted from the students of the various veterinary schools the same pre-education demanded of medical students, which is the graduation from a gymnasium and about equivalent to our American university degree of B.A. This step was followed in 1903 by the next advance, which gave to the Royal Veterinary College, at Berlin, the constitution of a university, acknowledging thereby that it had developed into a large and complicated institution of national importance. The first " rector magnificus " chosen was Professor Dr. Med. Vet. Schmaltz, the well-known author on veterinary anatomy. Finally, in 1910, Emperor William decreed that the Royal veterinary schools at Berlin and Hanover shall have the legal right to confer the degree of Dr. Med. Vet. under the restriction that candidates be veterinary graduates of merit and undergo the special doctorate examination, as in any university which is dependent upon a written thesis and its public defense before the faculty. Very recently the Kings of Saxony, Bavaria and Würtemberg have given the same privilege to the veterinary schools at Dresden, Munich and Stuttgart. These decrees do not abolish the title " Thierarzt," granted upon graduation from the veterinary schools, which must remain as a legal permit to practice veterinary medicine throughout Germany. Not many veterinarians will undergo the hardships of a doctorate examination in addition to their severe graduation examination.

Switzerland and Italy.—We need now only briefly state that the veterinary schools at Berne and Zurich, in Switzerland, are faculties of universities, and as such have conferred the degree of Dr. Med. Vet. for more than twenty years under the same restrictions as prescribed in Germany.

The Italian veterinary schools at Turino (1769), Milano (1791) and Naples (1815), are independent institutions, but

have enjoyed the rank of a university since 1880. They have the right to confer the degree of doctor medicinæ veterinariæ, but its abbreviation, if any, is unknown to the writer.

It may be well to explain here, that it is an old custom on the Continent of Europe to signify the doctor degree as a prefix to the name only (Dr.), whether it is that of divinity, law, philosophy, medicine or veterinary medicine, all holders of the same recognizing each other as belonging to "the nobility of the mind" (Geistes Adel). This is fairly known in American educational institutions, but it is not generally understood that no doctor degree, of whatever profession, has ever been conferred in Europe upon students on graduation from their schools or faculties, but that it is strictly dependent upon a special doctorate examination, and this is by no means always passed. It is a fact, for instance, that not all physicians are doctors of medicine, and if they do not hold this degree they are not addressed as such. This extreme exactness appears narrow to Americans, but it is the European habit to strictly classify men according to their rightful title.

The Veterinary Schools of North America:

(To be continued.)

A LAST word to the Alumni of the New York American Veterinary College, to remind them of the alumni dinner to be held on the evening of April 26. Tickets are $3.50, and may be procured from either of the members of the dinner committee; Dr. W. C. Miller, 459 West Forty-third street; Dr. Robt. W. Ellis, 509 West One Hundred and Fifty-second street, the president of the association; Dr. R. S. MacKellar, 351 West Eleventh street, New York City, or from the Secretary, Dr. J. F. Carey, 53 McKinley avenue, East Orange, N. J.

It is urged that members procure their tickets at once, so as to aid the committee in perfecting their arrangements. An alumni meeting will be held at the college, 141 West Fifty-fourth street, in the afternoon of the same day. Usually held 3 p. m.

NEURECTOMIES OF VETERINARY SURGERY.*

By L. A. Merillat, Prof. of Surgery, Chicago Veterinary College.

In order to appreciate exactly the position our nervous operations occupy among the broad possibilities of neurologic surgery in general we should first understand that the group of operations we have performed for more than a quarter of a century under the name of "neurotomy" consist of a number of *destructive interventions* aiming to permanently interrupt the continuity of sensory nerve trunks supplying painful structures.

Constructive Interventions aiming to restore lost innervation have not yet been attempted in animal surgery. The grafting of nerves, the transplanting of nerves and the anastomosis of nerves with the object of re-establishing their physiological integrity when paralyzed or accidentally divided are parts of neurogic surgery in which we have not as yet indulged.

It is, however, a fact that we are constantly in contact with conditions calling for such surgical work. We need only to supply the *modus operandi.*

The atrophy of the facial muscles due to paralysis of the seventh cranial nerve when injured at the point where it passes over the posterior border of the jaw; the atrophy of the shoulder caused by injury of the supra-scapular nerve and usually described under the name of "sweeny"; the atrophy of azoturia due, no doubt, to degeneration of the crural nerve; and the atrophy of the intrinsic muscles of the larynx accompanying laryngeal hemiplegia are so many conditions which call for construction nerve interventions and which offer possibilities in this direction; as it has often been demonstrated that the axis

* Read before the Ninth Annual Meeting of the North Dakota Veterinary Medical Association, Fargo, January, 1911.

cylinders of healthy nerves when grafted to paralyzed trunks will, sooner or later, re-establish the innervation of the region supplied by its branches.

It is, however, not my object in this discourse to introduce any new prospects, but to analyze the status of those old operations we perform under the name "neurotomy." I prefer the name " neurotomy " to " neurectomy " as it seems to me to be the best nomenclature when judged through the eyes of a surgeon. The mere fact that a section of the nerve is removed, a rather small feature of the operation as a whole, is not sufficient reason to mystify and deceive the unsuspecting reader that the operation is a nerve resection, when in fact its only object is nerve division.

Neurotomy has had an eventful history since it was first performed by Professor Sewell of the Royal Veterinary College of London about the beginning of the nineteenth century. It has, during these hundred years, been more highly applauded at times and more strongly condemned at others than any of our surgical operations. The charming results following its performance in some instances and the disastrous results in other apparently similar conditions, has always kept neurotomy from meeting with universal approval by the whole profession at any time during the successive epochs in which it has been performed. Although neurotomy is old, antedating nearly all of our operations except phlebotomy and castration, and although continually being resorted to at all parts of the civilized world where college educated veterinarians existed during the whole of the past century, I can not truthfully say it has ever met with lasting favor in anybody's hands.

I am here before you with the perplexing duty of describing and demonstrating a procedure for the relief of lameness of horses which I do not myself recommend very highly. Although I perform these operations almost every day of my life in the pursuit of my work as a veterinary practitioner, I feel it is my duty to first condemn them as the universal treatment of any of the various lamenesses and then attempt to assist you in

finding the place they actually belong in our therapy of locomotory diseases.

While I have no reason to suppose that you in your wisdom would be misguided so much by my feeble remarks on this subject, I do not want my visit to North Dakota to be followed by the shedding of hoofs and the wrenching of tendons which the unwise penchant for neurotomy is bound to bring forth. If conservatism is to be made a rule in surgery, in neurotomy it must be made an absolute law. The charming results which sometimes follow its performance often leads the young enthusiast into the dangerous practice of resorting to it too generally and especially too hastily where there are still prospects of deriving permanent cures of the diseases at hand.

The indications for neurotomy are not numerous. There are only a very few diseases and still fewer phases of these diseases wherein such intervention is actually indicated as a sane procedure. Positively *chronic conditions* of a rather *trivial character* are the ideal ones for neurotomy. For example, a case of navicular disease manifested by only a slight lameness lasting month after month which does not change either for the worse or for the better and which is then interpreted as being due to a slight, circumscribed lesion of the navicular bursa will yield permanently to a division of the posterior digital nerve. I believe in such cases the intervention is even curative not only of the lameness but of the disease itself. By making the diseased structures resume their full physiological activities, healing may be stimulated and a cure may follow. On the other hand if the disease is so advanced that the structures affected are not capable of bearing their full responsibility, the destructive process of the disease is augmented by the physical injury from which it was previously protected by lameness, and failure results.

Chronic conditions of a more serious character may sometimes be successfully unnerved where it is possible to place the diseased structures under favorable conditions of repose by shoeing and by less arduous occupations. Thus an unnerved horse that would break down promptly if kept at the arduous occupa-

tion of racing might have remained quite useful for years at light road work; the express horse that is "slammed" along rapidly over hard streets with heavy loads will often make a good horse for years at light delivery work; and the heavy draft horse pulling tons in the dray may make a splendid light draft horse, etc.

As a *last resort* neurotomy is, of course, always indicated. but in such events the practitioner must always look carefully into the possibilities of cures by other methods. After all of the palliative measures have proven futile; the chronicity of lameness is established beyond any doubt, and the patient has passed into a hopeless state of uselessness, the attempt, by neurotomy, to restore it to a useful animal for some occupation or other, is, of course, justifiable. In such circumstances a full confession of the well-known hazards must first be made.

The contra-indications are manifold. No *acute disease* process must ever be associated with such treatment. No animal affected with a *severe claudication,* no matter what its duration is, is a fit subject for neurotomy. But above all the *unsound hoof* offers the poorest prospect even when the other conditions seem ideal. The foot with a flat sole, a sole convex from hard work or from a previous attack of laminitis, the foot with a deep fissure of the frog, the weak heels, the cracked walls, either at the toe or quarter are so many conditions which positively condemn a subject for any kind of neurotomy. The surgeon in his deliberations must first assure himself that the hoof and its genetic structures are in a good state of health and strength. The *exostosis* engaging a ginglymoid articulation without physically obstructing its movements, such as a small, sharp osteophyte of the os suffraginus, the os corona, or the os pedis, is a very dangerous surgical prospect. *Mules* for reasons not easily explained are not as good subjects as horses for neurotomy.

The *untoward sequelae* of neurotomy are most liable to occur after plantar neurotomy and tibial neurotomy. Digital neurotomy is seldom ever followed by any serious results. Among many operations performed I have never seen but one

horse fall a victim to degenerative changes after this operation. The chief serious sequel of neurotomies consists of a wrenching loose of the plantar aponeurosis from the semilunar ridge; wrenching loose of the binding ligaments of the third interdigital articulation, wrenching of the attachments of the perforatus, wrenching of the sessamoidean ligaments, casting of the hoof and gangrene when large arteries have been accidentally divided. The accidents usually described under the name of "degenerations" are probably not degenerations at all. As healthy structures may be deprived of their sensory nerve supply with impunity it is very apparent that the fault must be placed upon the disease itself rather than upon lack of nerve supply. The physical injury to which the supporting structures are subjected after the pain has been removed is no doubt the real cause of such sequelae.

Failures to cure the lameness by neurotomy may be due to several causes. The entire painful zone may not have been unnerved on account of its wide diffusion; anomalous nerves may unexpectedly maintain a sensibility to the diseased part; and finally the physical injury to which diseased structures are subjected after neurotomy may extend the inflammatory process beyond the unnerved zone. This latter result is often seen after digital neurotomy. A horse thus unnerved is often cured perfectly until returned to work. During the first few days everything seems satisfactory, but after several days a lameness returns.

Painful stumps is one of the very common, though less serious, complications. These are due to the outgrowth of the axis cylinders into the surrounding connective tissue. When the connective tissue is derived entirely from the neurolemma the outgrowth is arrested in a more or less symmetrical bulb usually called a neuroma. These stumps cause lameness; they are analogous to the sensitive nerve ends which produce sensitive scars after amputations of limbs, fingers or other appendages.

Injuries such as cuts, punctures and contusions in tissues whose sensory innervation has been permanently interrupted by

neurotomy heal quite as promptly as under normal conditions. They are, however, often overlooked, since they cause no lameness and are submitted to violence that lameness would have prevented. The nail-prick to the unnerved foot is, therefore, usually a serious matter, while the calk or tread to the visible parts is of no more consequence than similar accidents to a healthy foot, when discovered early and submitted to the proper wound treatment. I have frequently observed that quite bad cases of necrobacillosis behave almost as well in the unnerved foot, pastern or fetlock as they do in the normal sensitive tissues.

The behavior of a cut nerve should be studied in order to clear up certain important phases of neurologic surgery, both destructive and constructive. If a nerve is divided with a sharp instrument and then immediately reapproximated, continuity will be restored in the usual time required for any other soft tissue to reunite; but the function of the nerve is not re-established for some months and the *innervation will never again be perfect.* If the nerve is motor the muscle supplied by it will *atrophy during the reconstruction period,* and after its axons reach by growth the old periphery, the muscle again takes up its function and gradually enlarges to its original volume. A certain definite *weakness* is, however, always extant in the case of motor nerves and a certain characteristic *numbness* persists year after year in the case of sensory nerves which have been severed and then immediately reapproximated. When a nerve has been mutilated or a certain part of it is resected (as in the case of our nerotomies) the chances of restoration are greatly reduced; usually the interruption is permanent and if any part of the innervation is re-established it is noted for its imperfection. In such cases the axis cylinders, unable to find the old channel, are lost wandering in the surrounding tissues or are effectually blocked in the scar or so-called neuroma. In short the regeneration of nerves, whose continuity have been destroyed occurs only when the most favorable conditions exist for the outgrowth of the axons, as, for example, when the approximation is perfect.

The effect of sensory neurotomy upon nutrition has, I believe, often been wrongly judged. The terrible and treacherous processes of dissolution, such as casting of hoofs, fracture of bones and wrenching of tendons which occur after neurotomy in acute, subacute and chronic forms have since Sewell, been attributed to trophic disturbances incident to the lost innervation. A number of experiments made upon sound horses and many observations made in animals unnerved at different parts of the body through accident have proven to my full satisfaction that the division of a sensory nerve trunk has nothing whatever to do with the nutrition of the region supplied by its branches. It is very evident that the trophic nerves, so-called, are associated closely to the vascular system of nerves and are capable of functionating independent of the trunks having the more simple functions to perform.

It does not matter to the practitioner so much whether the effects of neurotomy are trophic or physical in origin if he once appreciates fully the harmful effect of physical injury upon the unnerved regions.

Tissues, as it has already been said, regenerate promptly and normally, hoofs retain their normal texture and grow quite as fast, and blood vessels undergo no perceptible changes. Tendons, synovials, and binding ligaments do, however, soften, stretch out and loose their close attachment to the bones. These latter effects undoubtedly have their origin in pre-existing inflammations.

The following are operations which, having been tried, are found worthy of being retained in the category of veterinary surgical operations when applied under the restrictions given in the paragraph on general indications.

1. Bilateral Digital Neurotomy, frequently designated as "the low operation," is a division of the posterior digital nerve, the principal branch of the plantar nerve, distributed chiefly to the structures constituting the navicular apparatus. Its indications are navicular disease and traumatic adhesions supervening wounds, particularly nail pricks.

2. UNILATERAL DIGITAL NEUROTOMY. The same operation applied to but one posterior digital nerve is often recommended, especially by Hughes, for unilateral side bone.

3. BILATERAL PLANTAR NEUROTOMY often called "the high operation," is a division of the metacarpal nerves on the level of the distal third of the metacarpus. This nerve, where no anomalous arrangements of the branches, is the sole nerve supply to the foot with the exception of the anterior part of the coronary cushion and sensitive laminæ of the toe.

This is one of the most dangerous of the neurotomies and should only be resorted to as a last resort for navicular disease, traumatic adhesions, ringbone and side bone when all other methods of treatment, including digital neurotomy, have failed.

4. UNILATERAL PLANTAR NEUROTOMY is the same operation applied to one plantar nerve. It is an effectual intervention for unilateral side bone and is attended with less danger than the double operation. In fact I feel free to recommend this operation in side-bone lameness that proves obstinate.

5. MEDIAN NEUROTOMY is the surgical division of the median nerve at the level of the elbow. It is a more safe operation than plantar neurotomy because it does not as completely unnerve any whole region. Its chief indication is the lameness which through anomalous distribution of the nerve trunks below, has not yielded to the other operations. To-day it is indeed seldom applied as a first resort for any of the various conditions for which it was originally intended. The splint, the tendosynovitis, the tendonitis, the osteophytes about the shin and fetlocks, the various forms of tendonous, ligamentous and synovial afflictions of the fetlocks are no longer immediately attacked by this once classical operation. This operation was lauded very highly as a perfect cure for many of the very annoying chronic afflictions of carriage horses, race horses, saddle horses and draft horses. To-day it is more prudently applied.

6. MEDIO-CUBITAL NEUROTOMY is a double neurotomy. It is median neurotomy and ulnar neurotomy combined. The latter division is effected at the middle third of the anti-brachial

region. Alone, ulnar neurotomy is never performed, because the cubital nerve does not alone reach any part that is affected with diseases requiring neurotomy.

Medio-cubital neurotomy has been performed occasionally as a last resort for obstinate lameness. It is, however, a mighty dangerous procedure that might well be omitted from our surgical operations. Degenerations are certain to follow sooner or later.

7. TIBIAL NEUROTOMY is a division of the sciatic nerve at the level of the distal third of the tibial region; at the point this nerve divides into the two plantars. This operation is analogous to bilateral plantar neurotomy and although it is concerned in supplying innervation to the tarsus, the division has no harmful influence upon this articulation when applied to the treatment of diseases located in the regions below the fetlock pastern and the foot. Plantar might well be excluded from the surgery of the pelvic limb, and tibial substituted whenever it is desired to treat sessamoidean and pedal diseases.

It is, however, attended with all the grave consequences of plantar neurotomy and must be applied with great prudence. The ligaments of the fetlock and the perforatus tendon very readily wrench loose after this operation and often as soon as the patient is returned to work.

Tibial neurotomy is also performed for spavin. Alone it is ineffectual for this disease, but when performed with peroneal neurotomy the claudication of small spavins is usually arrested.

8. TIBIO-PERONEAL NEUROTOMY, the classical double operation for spavin, is a division of the sciatic as above described and of the branch of the small femero-popliteal generally described under the name of the anterior tibial nerve. Surgeons usually call it the deep peroneal nerve.

This operation (the peroneal division) is a difficult one to perform as the nerve is hidden deeply in the bellies of the anterior group of muscles. And aside from the difficulty of performance the surgical wound is a difficult one to heal. The muscles underlying and firmly enveloped in the strong tibial fascia will bulge

through the surgical wound and refuse to heal often for months. By following certain methods of suturing and by averting septic complications, this inimical feature can, however, be overcome.

9. FACIAL NEUROTOMY, division of the superior maxillary branch of the fifth cranial nerve, introduced into our surgery some years ago by Professor Williams, has become obsolete. The disease for which it was intended seems to have been a phantom. Epileptiform symptoms against which this operation was once directed, are now differently interpreted.

In regard to performance it might be said that all of our neurotomies belong to the order of minor surgical operations. They are, after all, very simple procedures, which every veterinarian with a knowledge of general surgery can easily perform. Plantar and digital neurotomy can, with the aid of local anaesthesia, be performed in the standing position; the others require recumbent restraint to which should be added either local or general anaesthesia. The seat of operation should be carefully disinfected after approved rules of skin disinfection, and the procedure throughout should be done in accordance with standard surgical methods. Nerves about to be divided should first be well stretched to assure some proximal degeneration. The wound, to prevent sensitive and unsightly scars should heal by primary union and the patient afterward should be given a protracted rest. The unnerved horse requires more careful surveillance as regards shoeing and general attention to the feet than is usually accorded it. The feet are kept short but the soles strong and the shoeing should assist in throwing the weight toward the bony column.

THE Meeting of the Pennsylvania State Veterinary Medical Association, March 7 and 8, in Philadelphia, was a marked success, far surpassing the anticipation of even the most sanguine. It was largely attended; the papers, discussions and clinics were of the best and the members enthusiastic.

IMPACTION OF THE BOWELS.*

By Dr. J. C. Wingert, Marengo, Ill.

This form of indigestion is caused by the animal gorging itself with food, and arises more from the animal's voracious appetite than from any defect in the quality of the food.

The condition is, however, more severe if the food consumed is especially concentrated or difficult of digestion.

The varied conditions which present themselves in these troubles necessitates describing them under two forms:

1. Overloading the rumen with foods that undergo an active fermentative process, and

2. Impactions without fermentation which cause suspension of rumination.

Under No. 1 we have for causes:

Overloading the rumen with succulent grasses, new hay, frosted fodder, soft, unripe corn, swill, garbage, and so forth devoured more of less ravenously.

All foods which ferment rapidly and produce much gas may determine the cause when introduced in sufficient quantities into the digestive canal.

In animals kept constantly in the stable, the feeding with green or fermenting food is usually the starting point of tympanitis.

The animals are much exposed to it in the pastures, when feeding on grass covered with heavy dew, or wet with rain, or covered with ice and frost. Also when drinking large quantities of cold water after eating.

There is comparatively no great formation of gas, and the gas which is formed is diffused through the stomach instead of accumulating in a layer in its upper part.

* Presented at the twenty-seventh annual meeting of the Ill. Vet. Med. Ass'n.

In these cases the contents of the rumen is a churning, bubbling, fomenting mass that cannot be evacuated with the trochar and cannula sufficiently to make any appreciable impression upon the intra-abdominal tension, as only a limited amount of gas and ingesta will gurgle from the cannula.

Symptoms.—The most striking symptom is the sudden increase and great volume of the abdomen. The left flank may extend so greatly as to become level with the dorsal spine; some may even go beyond this.

From the first onset animals usually cease to feed and rumination is suspended. After several small defecations they make vain repeated expulsive efforts. The extremities are *usually* gathered under them, but at other times are much spread, as if to avoid falling; the back is arched, the tail high, ears hanging, and the animal will only advance when forced to do so.

With the increase of tympanitis the respirations are accelerated and become painful, we notice anxiety, excitement, stamping, congestion of the mucous membranes and conjunctiva.

The eye is haggard, opened wide, and prominent. The lower part of ears, the joints and flanks are covered with sweat, the pulse becomes more and more accelerated, small and soon imperceptible. Dyspnoea increases rapidly, the nostrils are dilated, the mouth is half open and the tongue hanging, the saliva runs on the ground, the patient groans repeatedly.

There is nausea without any effectual eructations. Soon the anxiety becomes extreme, the extremities are cold, mucous membranes cyanosed; finally the animal becomes immovable and stupefied, sinks to the ground and succumbs to convulsions.

Under No. 2—Impactions without fermentation:

We find the rumen sometimes becomes filled with drier contents than the foregoing, from overfeeding and lack of exercise, from inactivity of the rumen due to debilitating dsease or influences.

From an insufficient water allowance, or from any of the innumerable circumstances and conditions that causes suspension of rumination.

In these instances the rumen is impacted one-half full, two-thirds full or even to the upper zone with relatively dry ingesta constituted chiefly of the rough forage feed, hay, fodder, and so forth, mixed with the smaller grains, corn, wheat, rye, peas, etc. At times the impaction is the cause of the indisposition, while at other times it may only be an effect.

In either case, however, it constitutes a serious condition that must be promptly corrected in order to save the patient's life.

Symptoms.—These vary with the causal conditions, especially with the quantity and digestibility of the food ingested.

The animals keep away from their mangers, arch the back and expel normal excrement in small quantity and at short intervals. They will move the tail, strike the abdomen with the hind feet, carry the head from one flank to the other and complain.

Sometimes they will lie down and almost immediately get up again. The countenance is anxious and haggard, the eyes are prominent and conjunctiva injected. In some cases we observe stupefaction; the animals are indifferent to everything happening around them. Inappetence is complete and rumination has stopped. Thirst is often increased; we observe ptyalism with motions of empty mastication, eructations, nausea and even true vomiting in some cases. The volume of the abdomen is increased, especially the left flank. The rumen is packed with alimentary matters; they are sometimes quite hard, but mostly soft. The abdominal swelling is not resonant on percussion, but pits on pressure, and when the animal lies down it does so on the right side. Pressure upon the abdomen are painful and the animal seeks to avoid them.

The peristaltic movements are lost or diminished, and as the case advances defecation is rare and not abundant, and the excrements are dark and hard. The temperature is not increased and is regularly distributed. Pulse is accelerated and the artery is distended. Respiration is not free and becomes quite painful in decubitus.

Treatment.—In those cases where tympany is observed the patient must be prevented from eating and treatment begun im-

mediately. At first we should do our best to obtain the evacuation of gases by the oesophageal route. This can be performed in different ways, either by pulling the tongue out of the mouth, which produces nausea and eructations, or by traction on the commissures of the lips by means of a straw rope, this gives rise to involuntary movements of the tongue which produce eructations and sometimes vomiting. Strong and prolonged pressure or massage on the left flank is sometimes sufficient to exacuate the gaseous contents of the rumen. The renewal of the peristaltic movements can be distinctly felt under the hand, and eructations are soon produced.

A large number of therapeutical agents have been recognized and used in these cases, but their value is generally inferior to that of mechanical means. They answer only in the cases where the latter are perfectly unsuccessful.

These therapeutical agents are sometimes stimulants, sometimes emetics, absorbents or antiferments. It is hard, I think, to name a drug or mixture that has not at some time or other been poured down some hapless animal in this condition with the expectation of getting relief. A great deal of it has done more harm than good, as it is not an uncommon thing to find a case where the medicine has taken the wrong route and entered the trachea and lungs instead of the oesophagus.

I will now try and outline a treatment which in my hands has always given very good results. In fact, in my opinion, it is the only way to treat these cases, and that is with the aid of the stomach tube. We are all more or less familiar with the intricate mechanisms of the ox's stomachs and the relations and connections of the oesophagus to them. It is decidedly uncertain in my opinion when we give medicine by the mouth just where or which one of those stomachs it is going to pass into.

The trouble in all of these cases is in the rumen, and that is where we must get our medicines if we expect to derive any great benefit from them. This can only be accomplished with satisfaction by the aid of the stomach tube. I use the tube in each and every case.

When I get a case, about the first thing I do is pass the tube, and do almost invariably get quite a quantity of gas from the rumen in this way. I always take a little time and get as much gas in this way as possible. If it is impossible to relieve the tension in this manner I use the trochar and cannula. But before removing the tube I administer a drench composed generally of raw linseed oil, one quart; oleum terebinth, two to four ounces; aromatic spirits of ammonia, two ounces; salicylic acid, four to six drams; well shaken and poured into the tube through a funnel. In a great many cases this is all that will be required. But, if in one or two hours gas is still forming to any extent, pass the tube again and repeat the drench as before. I have never had a case yet, when treated in this manner, that I had to repeat the drench more than twice to allay the fermentation and relieve the animal.

These same kind of cases treated without the tube, usually would hang on two or three days and cause all kinds of trouble and worry.

But in extreme cases the practitioner must be on the alert; he should not loose too much time in trying these means; he ought to know the right moment at which to abandon them and evacuate the contents of the rumen.

In extreme cases rumenotomy is the only thing to do, and it must be done at once, or your patient will die right before your eyes. Every moment's delay imperils the life of your patient.

The operation is performed in the standing posture if possible. By means of a stanchion to hold the head and by ropes to prevent decumbency. Except where instantaneous relief is needed to forestall impending death, rumenotomy should be performed under the strictest possible antisepsis. The field should be shaved, well washed and disinfected. The instruments, and especially the needles and sutures must be aseptic. The incision is made about five inches long through the abdominal wall, midway between the ext. angle of the ilium and the last rib,

beginning about two inches below the transverse processes of the lumbar vertebrae.

The skin and muscles are incised with the scalpel, and the peritoneum with the probe pointed bistoury. The retractors are applied to the wound and the rumen incised in the same direction as the incision in the abdominal wall; but about one inch shorter. The rumen is first punctured with the scalpel at that part occupying the middle of the abdominal incision.

In acute bloat the index finger is hooked into the perforation thus made, and the rumen drawn out as far as possible where it is held until the flow of the contents ceases. The abdominal tension now being relieved the incision is enlarged upward and downward to the required length. The contents are then removed, handful by handful, until the rumen is empty.

The edges of the wound in the rumen are now cleansed of all adhering particles, and then sutured with a Czerny-Lembert of catgut. The muscles and skin are closed with single interrupted stitches. A small orifice is left inferiorly for drainage. The edges are dusted with iodoform and covered thickly with collodion. It is essential that the animal should receive only limited quantities of liquid food, for if rumination is immediately stimulated by the ingestion of solid food, the contractions of the rumen will prevent all chances of primary union of the incision.

At the end of eight days the sutures in the skin are removed and the wound submitted to treatment indicated by its condition.

In those cases of impaction *without fermentation* the treatment should be directed towards the removal of the impacted mass, and also to restoration of tone to the over-distended walls of the viscus. Here again we can derive great benefit from the use of the stomach tube. By passing the tube we can, to a certain extent, ascertain the amount of distention present and relieve the rumen of any gas which it may contain. In those cases where the rumen is impacted one-half or two-thirds full, and the content is dry and solid, it can be softened and broken up by pumping water or linseed oil into the rumen through the

tube. Oil is especially beneficial to lubricate the passages and soften the mass of food.

Manipulation applied externally over the food mass is sometimes beneficial; it breaks down the food mass and excites the rumen to action.

Our medicinal treatment should be directed along the line of stimulants and purgatives. For purgatives in these cases I use magnesia sulph., sixteen ounces; tincture of ginger, one ounce, given every six or eight hours until the bowels are quite active.

For stimulants I use the following prescription: Fl. ext. nux vom., two ounces; spirits nit. ether, six ounces; aromatic spirits of ammonia, four ounces; alcohol, four ounces; mix and give two ounces every two hours until relieved.

In a great majority of those cases of overloading the rumen, such as we get where cattle break into a cornfield and load up all they can hold, I use this treatment and push it vigorously. I could enumerate a good many cases treated this fall and it has given good results in almost every case. If you can get to the cases before they are too far gone your percentage of losses will be very small.

But should these measures fail, before the animal begins to sink exhausted, or the brain becomes congested, or alvitis supervenes, rumenotomy should be performed.

BEFORE the Ways and Means Committee Dr. H. D. Gill, of the veterinary department of New York University, declared that horse owners in New York City were losing $500,000 a year because of the ravages of glanders. He came to Albany to speak for the bill appropriating $40,000 for payment for animals condemned because of disease. Commissioner Pearson of the State Department of Agriculture seeks to increase this appropriation to $70,000 and to have provision made for an appropriation of $20,000 to investigate means for stamping out glanders in New York City.—*New York Tribune* of March 23, 1911.

SYMBIOTIC OTACARIASIS OF THE CAT.

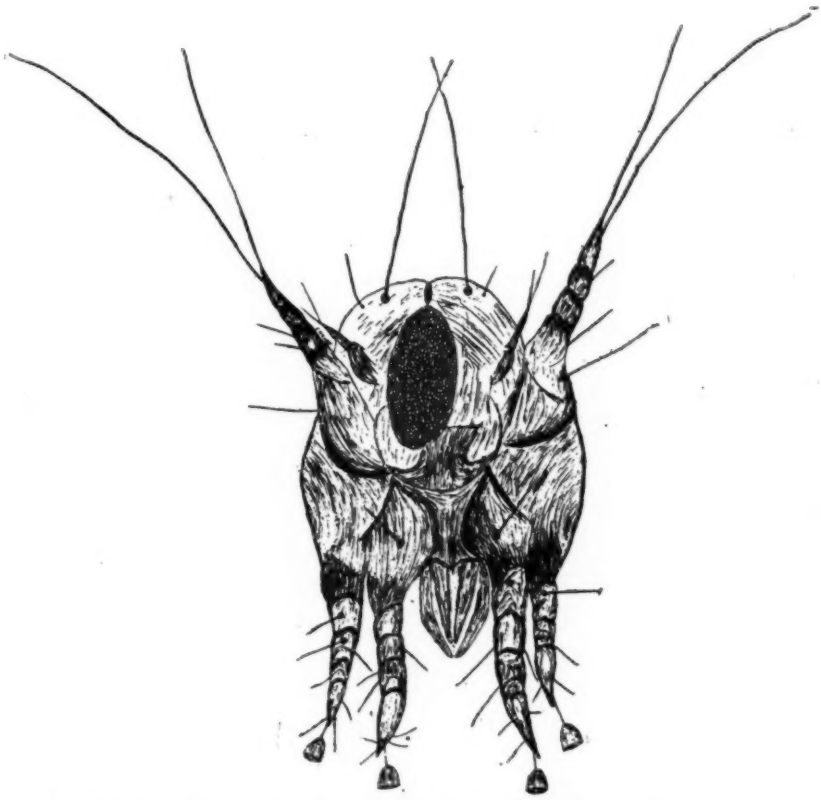
By J. W. Kalkus, D.V.S., Pathologist Washington State College, Veterinary Department, Pullman, Washington.

This disease, which is caused by the Symbiotes auricularis var. cati, is not common in this country, and therefore quite interesting; especially since it produces rather extraordinary symptoms. The parasite is a little longer than it is broad, the ovigerous female measuring from 450 to 475 microns in length and 250 to 300 microns in breadth. The male is 300 to 320 microns long, by 200 to 250 microns broad. Both sexes are possessed of four pairs of legs of five articles each; those of the male having ambulacra. The ovigerous female, however, has no ambulacra on the last two pairs of legs, while the fourth pair is only rudimentarily developed. Before entering upon a discussion of the disease it will probably interest the reader to have some history concerning the few cases I was enabled to investigate. The first cases appeared in a pair of Manx cats that were brought to this country from the Isle of Man in the fall of 1908. The owner informed me that these cats and all their progeny had suffered from periodic attacks of what appeared to be earache. This he assured me caused the animals to scratch their ears until they would bleed; at times also inducing them to act most singular, or as though intoxicated. No treatment was administered and after several of these attacks the animals eventually succumbed to the disease.

Symptoms.—These are usually characterized by an early loss of appetite, accompanied by nausea; so that any food partaken of will almost immediately be ejected from the stomach. The ears seem to be the seat of an intense itching, which causes the animal to scratch those parts violently; the whole resulting in severe

excoriations of the concha. At times it appears impossible for the animal to retain its equilibrium; it appears weak, sways back and forth, and acts as though mentally unbalanced, finally rolling over on its side and sometimes becoming semi-comatose for a few moments, afterwards arising and walking off apparently normal. During these attacks, which usually last from on day to a week, the animal becomes emaciated, appears dull and stupid, while the hair becomes devoid of lustre. On examining the inside of the ear we find an excessive amount of cerumen and a slight accumulation of scabs; upon closely inspecting these scabs we shall detect numerous minute, white, oval and quite active objects, which prove to be the causative parasite. At times there is also a peculiar foetid odor emitted from the ear. Although these parasites are usually easy to find, this is not always the case; in fact the ear may appear merely as though coated with a slight accumulation of filth. I have never, as a result of this affection been able to discover any ulceration of the ear. The epileptiform attack is caused by the loosening of the ceruminous plug and pressure against the tympanum when the animal scratches the cartilage of the ear; or by slipping about of the ceruminous accumulation while the animal is running. It may also be the result, as explained by Boucheron, of stimulation of the filaments of the trigeminal and pneumogastric nerves in the external auditory canals by the acari. Following the subsidence of these attacks the animal may remain apparently healthy for a period of several weeks or months; thereafter it may have a second attack. I was fortunate enough to obtain the complete history of one case in particular; a case I personally treated. This was a female kitten, two months old, which showed the first symptoms in October, 1909, being sick about three days. After recovering from the first attack she remained apparently in good health until December of the same year, when she had another period of illness, accompanied by the usual symptoms, this time of a somewhat longer duration. Following this there were ostensibly no further manifestations of disease until March, 1910, at which time the animal was placed in my care. It will

be obvious that during the cold winter months, inasmuch as no active symptoms of disease were then noticed, the parasites must have remained dormant; their host, during this entire period, having been kept from coming into contact with other animals,



Symbiotes Auricularis var. Cati. Ovigerous Female, Highly Magnified.

from which a second infestation could have been contracted. The duration of the incubation period of the ova varies according to surrounding conditions. When these conditions are favorable, the eggs may hatch in from twenty-four to forty-eight hours. However, it has not been determined how long the eggs may remain germinative and give origin to embryos under unfavorable conditions. Gerlach has seen the eggs of the Sarcopt of the horse hatch after being removed from its host for four

weeks. During the entire period the above described animal was affected nothing whatever was done to relieve her suffering, until being placed in my care, proper treatment was administered, whereupon she made an early and complete recovery.

Treatment.—After a diagnosis has been made the treatment is simple and the malady is by no means serious if properly handled. All coal tar products which are so fatal to cats are to be avoided. I have had very satisfactory results by pouring into each ear a saturated alcoholic solution of boracic acid once daily until all the parasites are destroyed. The alcohol has a tendency to dissolve the abundance of cerumen, thus exposing the parasites it harbors. Whereupon a second application will, as a rule, complete the cure.

DINNER TO DR. C. J. MARSHALL.

THE Pennsylvania State and Keystone Veterinary Medical Associations gave a dinner to Dr. C. J. Marshall in Leonard Pearson Hall, University of Pennsylvania, on Tuesday evening, March 7, in honor of his appointment as State Veterinarian. About one hundred and fifty ladies and gentlemen sat at the festive board. Four states, the District of Columbia and the Dominion of Canada were represented. The menu, which was tastefully gotten up and adorned with a splendid picture of Dr. Marshall on the front cover, contained the following list of honor guests and the subjects assigned them by Toastmaster Hoskins: Address of Welcome, Dr. John W. Adams; University of Pennsylvania, Provost Edgar F. Smith; Medical Education, Dr. Allen J. Smith; Our Canadian Colleagues, Dr. E. A. A. Grange; The Field of Comparative Medicine, Dr. John Marshall; Veterinary Education, Dr. Louis Klein; Our Association, Dr. Jacob Helmer; A City's Milk Supply, Dr. Samuel McHamill; Veterinary Journalism, Dr. Robert W. Ellis; Practical Dairying, E. T. Gill; Animal Husbandry, Dr. Carl W. Gay; The Ladies, Dr. H. D. Gill, and, finally, Our Guest, Dr. C. J. Marshall. The speakers, with few exceptions, paid little attention, however, to the subjects connected with their names, as they were so bubbling over with goodfellowship for Dr. Marshall and enthusiasm over his appointment as State Veterinarian, that they involuntarily gave voice to the sentiments nearest their hearts.

REPORTS OF CASES.

SOME PRACTICE OF THE OPSONIC.*

By Dr. JOHN T. GRUBER, Marion, Ohio.

It may be interesting to say something regarding the nature of Opsonins, before entering into a discussion of the curative effects of diseases and especially the chronic suppurative diseases, by increasing the opsonic index. The chemical nature of opsonins is not known, but it is the generally accepted theory that they possess certain combining powers, but few things are known regarding their action and the way they can be influenced. Opsonins may be stated as certain specific chemical substances within the blood which so act on the infectious organisms and renders them more easily phagocytized, *i. e.*, more easily destroyed by the white blood corpuscles, especially the polymorphonuclear leucocytes, which seem to play the most active part. Opsonins may be increased or decreased within the body. They are decreased more or less in all chronic suppurative conditions, with the exception of tuberculosis, where they may fluctuate from day to day, above or below unity. The opsonic may be increased by the injection into the blood of the toxines of the organism producing the disease. This is termed an opsonic vaccine. There are two different kinds of vaccines used, first, the autogenic, which is made from a culture of the disease-producing organisms. Second, a stock vaccine which has been prepared from similar cases. The technique of preparing an autogenic vaccine is very simple. The media, which is most difficult to make, can be purchased at very little cost already prepared, neutra agar being the one mostly used for the various cocci. Simply inoculate the agar slope tube and place in an incubator for

* Read before the Ohio Veterinary Medical Association Meeting, Columbus, January, 1911.

twenty-four hours. This varies somewhat according to the kind of organisms you are dealing with. The incubator I use is a common, small egg incubator. After twenty-four hours, wash off culture with a normal sodium chloride solution, sterilize, then place in a series of small vials each with an increased dosage. For a detailed description of this technique, I would refer you to an article written by Dr. Phillips and published in the AMERICAN VETERINARY REVIEW of March 1, 1910. During the past eight months I have treated four cases of chronic fistula of the withers and one case of cartilaginous quittor and one case of chronic nasal catarrh with empyemia of sinuses which was a sequel to influenza, and two cases of purpura hæmorrhagica, with very satisfactory results. One case of fistula was not cured. This case proved, on post mortem, to have a very extensive necrosis of the scapula and vertebræ; the other three cases were permanently cured. Two of these were treated with a stock vaccine with absolutely no result and which later reacted to the autogenic vaccine. The case of quittor was treated in the ordinary way for about six weeks without any apparent results, which later responded to the autogenic vaccine. The case of nasal catarrh with sinuses involved, was a very complicated one. I trephined the superior and inferior maxillary and also the frontal sinuses which contained a large amount of pus and treated, by irrigating with antiseptics and astringents until operating wounds healed, then the treatment was discontinued, and in about two weeks nasal discharge was as profuse as ever. This continued for about a month, when I decided to use the autogenic vaccine and in about two weeks, made a permanent recovery. The two cases of purpura reacted to the vaccine, which was a stock vaccine, very promptly. One case was a very severe one which had been treated by an empiric for about twenty days. This case showed symptoms of anemia of spinal cord. The dosage of vaccine depends on the individual case. One must be governed by local swelling at point of injection and upon discharge of pus in suppurative conditions. Beginning with a small dose, about one-half c.c., which would contain approximately 25,000,000 dead bacteria, nephalometer comparison. If swelling occurs at point of injection and discharge of pus is more copious, wait until the negative phase passes over, which will be in about four or five days, then repeat increasing dosage, about .2 c.c. If the negative phase does not occur, the injection may be repeated much sooner, with an increased dosage of about .4 c.c.

In summing up these few cases, I may say first that the vaccine thereapy should be encouraged and, second, that the autogenic is the more reliable product.

ASCITES IN A HOUND BITCH.*

By W. C. HOLDEN, Delphos, O.

A hound bitch, weight about fifty pounds, in normal condition, five years old, and had dropsy of the abdomen or ascites.

History.—This bitch whelped on April 1, giving birth to seven healthy puppies, and three weeks later refused to own them. They were fed on cow's milk until old enough to eat solid food. Her appetite began to fail and total loss of appetite succeeded in a few days. She was only allowed a limited amount of water. By May 19 all of the visible mucous membranes were of a light color (yellowish), which soon turned to a dirty orange yellow and was treated for jaundice as the case indicated. Gave mild purgatives and diuretics which consisted of castor oil and acetate of sodium. I pressed the abdomen between my hands a few minutes each day over the region of the kidneys to assist in emptying the gall bladder. She made a complete recovery from jaundice in two weeks. We soon noticed the abdomen begin to fill with fluid and to continue to do so until it became an enormous size. I insisted upon tapping her, but the owner would not consent to have it done. Nor did he consent until she got so heavy she could hardly walk. On June 28 she was brought to the hospital for treatment and a pitiful looking sight she was, her abdomen almost touching the ground. I stood her on an operating table and pushed a milk tube through the floor of the abdomen with five feet of rubber tubing attached. The abdomen was so distended with fluid that the skin was torn two inches in length at the linea alba posterior to the umbilicus. The tube was inserted here without any difficulty. The other end of the tubing was lowered into a gallon vessel. It required thirty minutes to draw out fluid and the measurement was fourteen and one-half liters. In character, it was transparent and sticky to the fingers and was free from lymph. I put her on mild cathartics and diuretics without results. July 29 she was returned apparently as bad as ever. I tapped her again as before

* Presented to the Ohio Veterinary Medical Association, Columbus, January, 1911.

and drew from her twelve liters of fluid which did not seem to be nearly so adhesive as the first tapping. Continued the same treatment as before and the food she ate consisted of lean meats, dried beef, bologna, etc. She ate scarcely enough to keep her alive. August 26 I punctured her again getting this time, eight and one-half liters of fluid and September 28, tapped her again, getting seven liters of fluid, making in all of the four tappings, forty-two liters of fluid, equal to ten and one-half gallons.

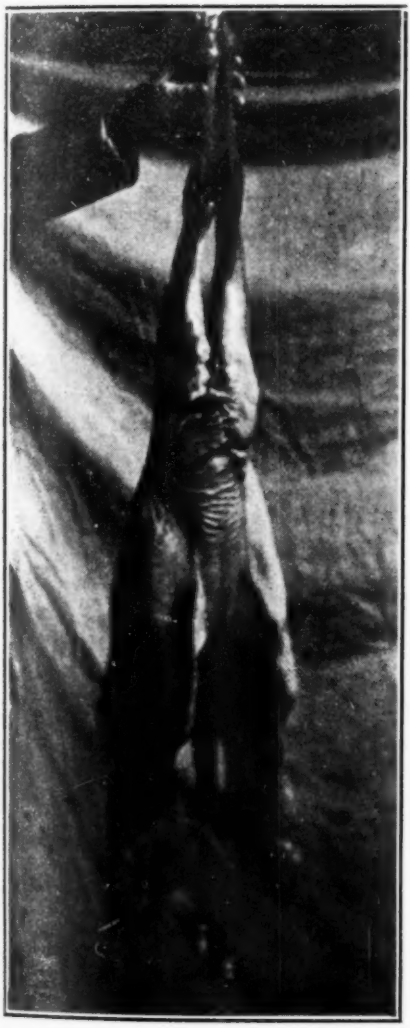
I now began to think of changing the treatment and to experiment, I attached to the free end of the tubing, a small glass funnel and elevated it above the animal's back about four feet. I prepared three gallons of a five-per cent. solution of soda bicarbonate and allowed it to flow into the abdominal cavity, keeping the funnel full so as to exclude the air. I heated the solution to body temperature, before administering. I then placed her on her back, kneaded the abdomen a few minutes, placed her on her feet again and allowed the solution to run out. She was given five grains of acetanilid, repeated every six hours, and one-eighth grain of pilocarpine, subcutaneously, once a day for four days, which greatly increased the fluid and amount of saliva, which is essential in accomplishing a cure in ascites. She made a complete recovery in three weeks after the last tapping.

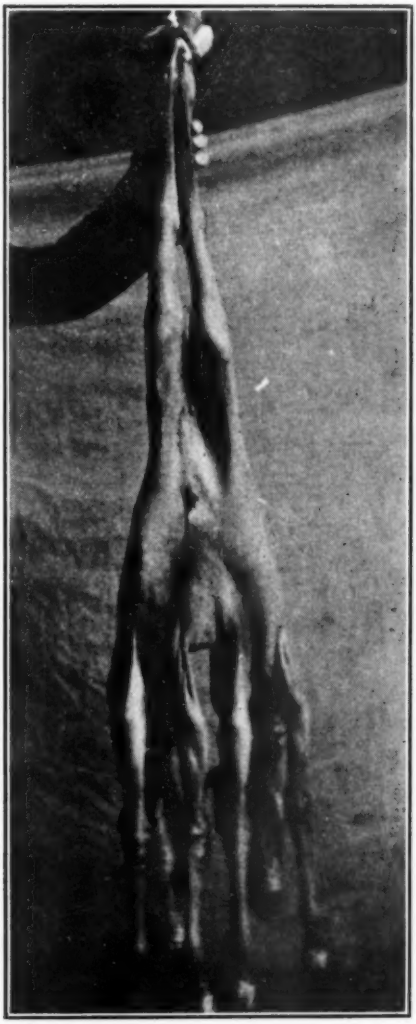
The owner would not trust the bitch wholly with me, as his wife could not sleep unless she was in the same room, so I did not have her at the hospital all of the time. There were times I did not see her for three weeks. What seemed so strange to me was, how could the diaphragm stand such enormous pressure without tearing?

A MONSTROSITY.

By C. H. MAINHART, M.D.V., Richmond, Ky.

The accompanying cuts represent three different views of a monstrosity of a mulekin I delivered of a mare on the 14th of February past. It was two separate mules from the diaphragm forward, and one mare mule back of the diaphragm, with the exception of two livers. The œsophagus of both emptied in one stomach. It had posterior presentation with lumbo-sacral position. It lacked sixty days going full time. Mare recovered nicely. The monstrosity is being mounted by a Cincinnati taxidermist.





ENGORGED RUMEN.*

By Dr. H. E. Myers, Fostoria, Ohio.

On December 4, at 6 P. M., I was called to a country residence a distance of about ten miles. On arrival I found my patient to be a Jersey cow, six years old, due to calf April 1. She was lying on her side, breathing short and labored, and bloated to her full capacity, which seemed to have a dull sound. Before my arrival, several obliging neighbors had volunteered their services and were sure she would burst if she were not tapped. A knife was plunged into the rumen without any results. I used a trocar and was somewhat surprised when, after a few bubbles issued from the cannula, no more gas could be found, or at least it would not escape when a way had seemingly been provided. The history of the case is as follows: This cow with several others, had been fed on corn fodder, and, during the day, allowed to pasture over an old meadow. On this particular morning, however, they were all turned into a field with new clover in it which had grown up late in the fall and was more or less frosted. The cow did not come to the barn with the others and was found in the condition before mentioned and could scarcely be gotten home before she went down. Rumenotomy was decided upon, for she was so bad that to defer the operation meant death and I rather thought that the same term would answer to describe the result of the operation, for I feared she would not live long enough to perform it. Going into detail as to the technique of the operation before a body of professional men, such as this association represents, would be superfluous and a waste of valuable time, so that will be dispensed with.

After cleansing, an incision about eight inches in length was made and as soon as the rumen was cut into, the contents, which were a mass of partially masticated grass, came bubbling and frothing through the opening. About three bushels of this fermenting mass was removed, while a good quantity still remained, from which the gas was pressed out with the hands. One-half ounce of ammonium carbonate was introduced through the opening. Rumen was sutured with No. 6 catgut, skin and muscles with linen tape. The animal lay perfectly quiet until the last few sutures were taken. Ordered a light diet for ten

* Presented to the Ohio Veterinary Medical Association, Columbus, January, 1911.

days. Saw her a week later and found her on the barn floor with a hay mow on either side and learned she had been there since the day following the operation. A small abscess had developed just below the puncture made before my arrival, where feed had worked between the muscles. This extended to upper part of my incision and drained into the rumen through an opening of about two inches which was caused by one stitch being torn by overfeeding. I opened the abscess and cleansed it, sutured the small opening in rumen and nothing farther was needed.

The part that appealed to me was that no gas could be reached by the use of the trocar, and then finding it mixed with the food and not separated as it is usually.

AN UNLOOKED-FOR RECOVERY.

By J. H. PICKERING, Edmonton, Alberta, Canada.

The subject of this report was a horse used in the express business, and had just arrived at the stable after a rather exciting runaway. When I arrived the horse was laying down in a single stall and was bleeding very freely from the rectum. Upon inquiry I learned that one of the shafts of the sleigh had run up the horse's rectum. I examined the shaft and found it covered with blood; so I thought it would soon be all over from the looks of the quantity of blood that had passed from the horse. The horse was gotten onto his feet; he was very weak and groggy; visible mucous membranes pale. I gave him large doses of whiskey and tinct. ferri per chlor. and decided to explore the rectum for injury after the bleeding had seemed to stop. Removed large quantity of clotted blood and some feces, but could not find any injury, and although I removed my shirt so that I could insert my arm right in to the shoulder, I could not find any trace of the injury.

The hemorrhage seemed to stop, but the horse was so weak he could hardly stand up. Kept up the whiskey and also gave tinct. of iron often. A few hours after the horse seemed in severe pain, so I gave a dose of chloral hydrate and tinct. of opium, which relieved him. Next day I gave a small dose of raw linseed oil. After this the feces was passed regularly. Horse's temperature never went up higher than 102⅗ degrees

Fahrenheit. He had slight discharge with the feces after a few days. The urine seemed scanty and of very disagreeable odor. I gave mild diuretics and even yet, although the horse seems well and in good shape, the urine is rather scanty, high colored and has a very distinct and bad odor. With this exception the horse seems alright, temperature normal, eats and drinks well, feces passed in good shape, the horse looks bright and moves around smart.

There is no doubt but what the shaft entered into the rectum. Bystanders who witnessed the mixup report that they saw the shaft run into the horse, also the profuse hemorrhage and the blood on the shaft show this to be the case. I think the shaft must have run through the bowel up farther than I could reach, and have injured the kidneys. I have no doubt from the condition I found the horse in that there must have been a lot of internal hemorrhage, and I am putting it mild when I say a ten-quart pail would not any more than hold the blood that was passed from the rectum through the anus. There must have been a pretty large artery or vein ruptured to produce such hemorrhage, and, from the general weakness and color of the mucous membrane, I am sure there was a lot of internal hemorrhage as well as what was passed externally. I believe the large doses of whiskey which I gave for the first two or three days, and especially the first day, was very instrumental in saving his life. So, now, after twelve days have passed and he seems practically all right, it looks like a rather remarkable recovery to me.

ANTE-PARTUM PARESIS.

By Dr. J. H. PICKERING, Edmonton, Alberta, Canada.

Under the reports from the English review, I see a case of milk fever reported as occurring one month before parturition took place. Having had a case in our practice here that occurred two months before parturition, I thought I would send in a report of the case for publication.

On November 7, 1910, I was called to see a cow belonging to Mr. S. Wilson, of this city, and found the animal suffering from a well-marked case of milk fever. She had been prostrated for twelve or fourteen hours before I was called in to treat her. Now, milk fever is very seldom seen in this country. In nine

years' continuous practice I have only had six cases of milk fever; and when you take into consideration that this is a great cattle country and a great deal of dairying is carried on here it has always seemed strange to me that there is so little of it out here. I practiced in Ontario and Illinois before coming here, and I can remember quite well how great was the mortality in milk fever before the Schmidt treatment of injection with potassium iodide came out; and even *with* this treatment I did not have the success that many claimed for it. But the oxygen or air treatment, has certainly got the disease "cinched," and it is a great triumph for the veterinary profession.

In this case I had no oxygen tank so I injected the udder full of air, no other medicine was given; and after the second injection the cow was up and made a good recovery. On January 7, 1911, my partner, Dr. Cairns, was called to attend to a case of difficult parturition. In this cow both mother and calf came through the operation alright. This cow then had the attack of milk fever just two months before calving. The cow had been giving no milk for two or three months before the attack of milk fever.

A TREATMENT FOR CHOKE.*

By C. W. Fogle, Leipsic, Ohio.

This paper contains nothing new, but I hope that it will cause a discussion of a condition that is frequently hard to treat—namely, choke—especially when caused by oats. The following is a resport of a case:

The patient was an old gray gelding that had choked several times before. The cause was a feed of new oats given about twenty-four hours before I was called. The œsophagus was apparently filled with oats, from the stomach up to and including the lower third of the cervical portion. The horse was not showing much distress, but was standing quiet, head up, saliva running profusely and retching every ten or fifteen minutes.

I gave arecolin, one-half grain, and strychnine, one-quarter grain, followed in fifteen minutes by one grain of eserine.

I then left to make another call, returned in an hour and found the patient no better, although the typical result of the arecolin and eserine was apparently evident.

* Presented at the Ohio Veterinary Medical Association, Columbus, January, 1911.

Over the most superficial portion of the oesophagus, about the middle of the neck on the left side, I anæthetized a space four inches long and one inch wide, using a preparation of cocaine and adrenalin, clipped the hair, scrubbed and disinfected both hands and the part to be incised, cut through one skin with a bistoury, broke down the areolar tissue with my fingers and found the œsophagus, around which I passed a piece of sterilized bandage one or two inches wide. I then passed the stomach tube, per orum into the œsophagus and when the end of the tube touched the oats, had an assistant pump slowly while I compressed the bandage and watched the progress of the treatment. In a very few minutes the obstruction of the oats was removed and I proceeded to close the wound with a few stitches accompanied and followed with warm antiseptic irrigations. The patient was restricted to a sloppy diet.

In breaking down the tissue with the fingers, one should be careful not to make a pocket in the jugular furrow, as this mistake will necessitate an opening lower down to allow drainage.

Keep your fingers on the œsophagus while the assistant is working the pump so that if the tension becomes too great, it may be relieved at once.

I operated on the same horse about one year later with the same results. This operation, is, of course, only of the heroic nature and should only be attempted after the usual treatments, such as eserine and arecolin have failed.

I have operated in three other cases since the above-mentioned patient's last recovery and was successful with only one of them.

Do not expect to be successful when the "choke" has been standing for four or five days.

Merillat advises the use of a double tube stomach pump.

A FEW CASES OF TETANUS.*

By Dr. Dettman, Troy, Ohio.

There is no use in my describing what tetanus is, for you all know, and now will try to describe treatment for same, starting with a case not so developed as some others and giving treatment.

* Presented at the Ohio Veterinary Medical Association, Columbus, January, 1911.

Patient four years old, disease caused by nail prick. The animal was left in his natural abode and given the following treatment per orum. For the first twenty-four hours, oleum lini, two ounces; acidi carbolici, one dram, every two hours, and as time passed the dose was given less frequently and termination in three weeks. I don't believe it would have been necessary to have given it the last week, but cut the dose to just a few minims to treat the owner of the horse, which we all sometimes have to do. Now, gentlemen, will treat the worst case of all which made a complete recovery:

Patient, a brown mare, heavy in foal, disease caused by an injured hock. Symptoms: Pulse quick, temperature 101 degrees Fahrenheit, very rigid, tail elevated, anxious look, etc. Prognosis fatal, and on the strength of it gave treatment which I thought would kill the mare if the disease didn't. Treatment consisted of the following: Three ounces of a five-per cent. solution of carbolic acid hypodermically every two hours. Instructed the owner to let me know the next morning, which he did and said the mare was sweating fearfully and breathing hard, but would like me to come again. On arrival, found the mare as described. Thereon I gave one ounce of fl. ext. of gelsemium. In course of half an hour mare quieted down to some extent. Left orders to give acid every four hours and one dram of gelsemium every two hours. Gentlemen, will say that mare made a complete recovery. Will also say, in conclusion, that this is the only place I give sedatives at all.

THE eighth annual banquet of the Veterinary Medical Society of the Iowa State College, was held at the Savoy Hotel, Des Moines, Iowa, on March 10th last. It was a very enjoyable affair.

THE B. A. I. Veterinary Inspectors' Association of South Omaha, Neb., held their annual election of officers at their meeting held March 20, 1911. The following officers were re-elected to succeed themselves: Dr. F. Jelen, president; Dr. J. G. Beattie, vice-president, and Mr. Edgar Jackson, secretary-treasurer. The past year has been a very profitable one for the Association, much good has been brought about by the reading of the papers on different diseases and the discussions following same.

EDGAR JACKSON, Secretary-Treasurer.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. Liautard, M.D., V.M.

A Case of Bastard Strangles [*Henry B. Eve, M.R.C.V.S.*].—Six-year-old mare, while at work was suddenly taken sick and had to be sent home, where she was found with every symptom of " acute " passive congestion of the lungs, apparently as the result of overexertion. This was complicated later with pleurisy and pericarditis. With the indicated treatment of counter irritants on the chest, febrifuges and diffusible stimulants the animal apparently recovered and was sent home where she was allowed to remain idle for considerable time so as to allow her to recuperate her condition. She improved and was about going to be sold when, during one night, she developed an enormous swelling of the pectoral and abdominal regions. This was tapped and fully six gallons of pus were taken from it (from the abdominal cavity, writes the author). The swelling gradually subsided and convalescence was uneventful. The pleurisy and the pericarditis were considered as of septic origin.—(*Veter. Record.*)

Retention of the Fœtus [*W. J. Young, M.R.C.V.S., D.V.S.M.*].—Recently bought, a cow was expected to calve a few days after. She showed the typical symptoms of milk fever and was treated by the owner. She was up on the third day. Thinking that perhaps the cow had calved at the dealer's place, who then kept it, the buyer wrote for it and got the answer that the cow had not calved. Four months after, Young saw her in the last stages of tuberculosis and advised her to be destroyed. At the post mortem lesions of old-standing generalized tuberculosis were found in the thoracic and abdominal cavities. The uterus contained a large fœtus in advanced state of decomposition with two gallons of fluid. Both shoulder blades and carpal bones were devoid of skin and flesh. The fœtus showed no signs of tuberculosis. During life the cow had obstinate con-

stipation, steady fall of milk and abundant uterine discharge.—(*Veter. Record.*)

REMARKABLE CYSTIC ADENOMA WITH CILIATED EPITHELIUM IN A COW [*A. Leslie Sheather, M.R.C.V.S., B.Sc.*].—This is a record of an interesting discovery made at the post mortem of a cow at the slaughter house where she had been killed. Unfortunately the viscera had been removed and only the two sides of the trunk could be looked at. Attached to the peritoneum, there were a large number of cyst-like structures, varying in size from that of a pea to that of a cocoanut and in color from a pale yellow to a darkish red. They were forming masses with smaller cysts attached. The majority were quite sessile, but a number had large peduncles; they were, on the left side of the carcass more numerous than on the right. The lymphatic glands were also the seat of similar cysts. They contained clear watery liquid. That which seemed to be the omentum was an enormous mass of cysts, weighing 110 pounds. Some of these cysts, contained clear, watery, pale yellow colored fluid, and in a few a small amount of blood. This fluid, after centrifugation, left a deposit consisting in cells provided with numerous cilia which were moving, even after many hours since the slaughter. The tissue of the diseased gland was greatly reduced and the walls of the cyst were composed of a stratum of fibrous tissue with lining of columnar epithelium. Similar cysts had also been noticed in the lungs, liver, stomach, spleen and also abdominal organs.—(*Journal of Comp. Path. and Thera.*)

FRACTURE OF THE FLOOR OF THE PELVIS [*Capt. E. P. Argyle, A.V.C.*].—Aged mare had a fall, was very lame on the off hind leg, which is carried forward with a circumduction motion. Rectal examination revealed crepitation round the obturator foramen. The animal is put in slings. After a slight raise in the temperature the mare takes well on the treatment. Repeated rectal examinations show the formation of a callus on the pelvic floor, to the right side. Muscular atrophy sets in. After four weeks the mare walks comparatively well and with much improvement. For two weeks more she was kept at rest, then took gradually increased exercise, and at the end of nine weeks was able to resume work. A fortnight later she had another fall, with the same symptoms and she was destroyed. Post mortem: Old comminuted fracture of the right pubis and ischium, involv-

ing the obturator foramen. There were no attempts to formation of false joints, but complete union. There had been some displacement and the obturator foramen was partly obliterated by the callus. The muscles supplied by the obturator nerve had no trophic alterations.—(*Veter. News.*)

SUBCUTANEOUS INJECTIONS OF AQUEOUS SOLUTION OF CARBOLIC ACID IN THE TREATMENT OF STRANGLES [*Capt. G. Clive Webb, A.V.C., F.R.C.V.S.*].—These were experiments carried on by the author, who made the injections near the common seats, the formation of abscesses. Each injection contained one drachm of carbolic acid with water to form a ten per cent. solution. Three injections were given daily for three days. The conclusions were as follows: "Although the subcutaneous solution of carbolic acid, in strength varying from five to ten per cent., does not appear to cause any marked irritation, yet in the majority of cases hard swellings result at the seat of inoculation, which persist for a considerable time, and if a second injection is made at too short an interval, near the site of the first injection, necrosis and sloughing may occur. In cases in which a submaxillary abscess was in the process of formation at the time of injection, the latter appeared to have no beneficial effect in causing resolution of the abscess or preventing its maturing and bursting. In some other cases, the fluid injected was diluted to a strength of two and one-half per cent., the same actual quantity of carbolic acid being administered at each injection. Swellings still resulted and seemed to be in nowise less severe.

"Comparing results of animals treated in this way with those of a number of animals left untreated, the course of the disease and abscess formation in the former appeared to be in no way favorably affected. The good effect of any antiseptic properties of the carbolic acid is probably more than counterbalanced by its destructive effects on the animal cells and in particular on the phagocytes inhibiting their action. I am therefore of opinion that this form of treatment has no merits and is not to be recommended."—(*Ibidem.*)

TRAUMATIC INDIGESTION IN CATTLE [*W. Selborne Worthington*].—When a sharp body, a piece of wire is swallowed and remains in the rumen, with the food, no inconvenience results from it. But when it gets into the reticulum its presence is soon manifested by a series of symptoms for which the veterinarian

is called. But it is generally too late. The symptoms of indigestion are usually recognized, but with them there are one or two important ones, which aid to form the differential diagnosis. For instance, speaking on broad lines, " when indigestion is due to paralysis of the muscular coats of the rumen and reticulum the cow does not throw the cud. *She simply cannot.* If the indigestion is due to a wire in the reticulum, she chews the cud irregularly, but it *hurts her to throw it.* Again, the temperature in most cases, where there is a wire, *rises slowly and steadily.* In indigestion of non-traumatic origin the temperature either remains normal of *jumps up at a bound,* so to speak."

By closely observing for these manifestations in cases where he had been called for cases of indigestion, the author has been able to relieve animals by operation, viz.: Rumenotomy and exploration of the reticulum, where he has generally found and removed the sharp piece of foreign body—cause of the trouble. (*Veter. Record.*)

CASTRATION OF CRYPTORCHIDS THROUGH THE FLANK [*E. C. Winter, F.R.C.V.S.*].—The writer has operated, by this method, some twenty-five horses and lost only three: one from peritonitis, one from septicæmia and one while getting under the influence of chloroform before the operation was started. The procedure is to physic and starve the patient for forty-eight hours, to empty the bowels and give an enema an hour before operating. The horse is cast, chloroformed, and the skin disinfected with iodized chloroform. The incision is made where the curl is in the hairs in front of and below the point of the hip. The skin is incised, first vertically, then the two layers of muscles, diagonally, not cutting the striæ, but dividing them with fingers or a spatula. The wrist of the operator is wrapped with a towel soaked in antiseptic fluid, the hand is introduced by breaking through the peritoneum with the finger nails. When the testicle is removed the outer layer of muscle is sutured with three stitches and then the skin. The wound is coated over with collodion. Cicatrix takes place by first intention.—(*Veter. Journal.*)

FOALING CASE—RUPTURE OF THE UTERUS DURING FOALING [*E. F. J. Bordeaux, G.M.V.C.*]—Heavy draught mare was about due to foal. She had pains for two days. She had plenty of milk. The cervix was fully dilated, but the uterus was found

empty. Under it the fœtus is distinctly felt. The rupture could not be detected with the hand. The mare died in forty-eight hours. Abdomen was found full with fluid and exudate, dark in color and offensive smell. The foal dropped out with the intestines, when the abdomen was open. The right cornu was ruptured at the extremity and the edges were irregular and jagged. This was the third time the mare had a foal.—(*Ibidem.*)

Cases of Foreign Bodies in the Stomach [*XX*].—Small pug swallowed a penny and since has been attempting to vomit. Gastrotomy is performed, penny extracted, dog gets well.

Bull terrier stole a joint of meat, bolted a piece containing a metal skewer four and one-half inches long. Operated and had good recovery.

Fox terrier swallowed five-inch wooden skewer. Operated. Did well.

Cat vomits blood. On palpation a stick of wood is felt in the stomach. The cat has peritonitis and is destroyed. Post mortem shows that the stick was sharp at one end, had perforated the stomach and given rise to purulent peritonitis.

Bull bitch had a swelling over the thyroids. Liniment is prescribed. Seen ten days later the swelling has gone from the neck, but there is a large one on the back extending from the loins forwards. It is open and a broken hat pin three and one-half inches long is removed. The animal died the following day with purulent peritonitis caused by perforation of the stomach.

Small Manchester terrier swallowed a half penny. Operated. Recovery.

Small Dalmatian had a swelling on its back over the last three dorsal vertebrae. It is punctured and a hat pin is found and extracted. Dog got well.

These cases were seen in the space of seven months, out of about 1,200 animals examined. Such a number would seem to show that similar accidents are not uncommon.—(*Veter. News.*)

FRENCH REVIEW.

By Prof. A. Liautard, M.D., V.M.

Secondary Cutaneous Melano-Sarcomatosis in a Dog [*Professors Dr. V. Ball and C. Cuny*].—Seven-year-old pug,

very fat, is brought to the writers for treatment. He has, on a level with the internal toe of the left forepaw, a black tumor, irregular in form and as big as a hazelnut. It has a firm consistency and is ulcerated in one point. This growth exists since about six months. All over the body except the head, there are a certain number of melanotic tumors; on the flanks, the legs and the tail. They have gradually increased in number, are rounded, semi-spherical or lenticular and of very black color. They vary in size from that of a small pea to that of a hazelnut. On the hind leg they exist principally on the anterior face, on the dorsal in the front leg and those on the tail are on the inferior face. The dog presented no indication of glandular or visceral metastasis. The histological examination of the primitive tumor, that of the forepaw, revealed its nature of globo-cellular melano-sarcoma.—(*Journ. de Zootech.*)

OSTEITIS OF INFECTIOUS ORIGIN [*Savary, Army Veterinarian*].—Gelding is laid up for very large œdematous swelling of the four extremities, sub-abdominal region and sheath. The head is free. The swelling is scarcely painful and on the external face of the legs shows lymphatic cords, having no tendency to suppuration. There is no elevation of temperature. The general functions act normally. Excessive hypersthenia of the loins is manifest, even with the simple pinching of the region. Circulation is normal.

The history of the animal is that he had strangles some while ago and has been castrated after. For treatment: massage, warm fomentations, astringent applications and general tonics internally. Soon, however, the sheath is so swollen that it has to be scarified. The general condition remained about the same for a long time. About five months after the beginning of the disease the lymphangitis subsided very rapidly and on the legs were observed several bony neoformations. "On the right foreleg a fusiform exostosis on the internal face of the radius; on the left anterior leg, a similar lesion on the head of the external small metacarpal bone; on the right hind leg, one exostosis as big as a hen's egg on the head of the internal small metatarsal, looking like a big spavin, and on the same leg an exostosis on the external small metatarsal." The left hind leg remained clear of lesion. None of these neoplasms existed before. There had been no lameness. The exostosis developed insiduously from the month of April to that of September, concealed by the swell-

ing and the angeoleucitosis of the extremities. Gradually the condition of the animal improved and he was soon able to resume his work. The exostosis diminished some in time, with the exception of the one that occupied the seat of a spavin on the right hind leg. The author concludes that infection from strangles may be considered as the origin of this peculiar complication of pathologic condition.—(*Rev. Gener. de Medec. Veter.*)

PROLAPSUS AND DISTOKIA DUE TO VAGINAL TUMOR IN A COW [*Professor M. Bru, of Toulouse*].—For some time when this pregnant animal laid down, there has been retropulsion of the vagina, which protruded some as a red mass, which would disappear when the cow was standing up. When the time for calving came she has a prolapsus of the vagina that the owner failed to reduce. The author was called. The protruding organ is quite large, the mass is very hard, the neck of the uterus is pushed on one side close to the lips of the vulva and its general form is irregular and constituted by a large tumor developed in the thickness of the vaginal walls. The reduction was very difficult, and then by exploration it was found that implanted on the right wall of the vagina, the tumor was in contact with the entire internal surface of the cavity which it filled more or less, pressing against the rectum and bladder, and stimulating the violent and expulsive efforts of the animal. A contentive bandage had to be applied to prevent the return of the prolapsus.

As a delivery was expected in a short time, some little time was allowed to pass before further interference was resorted to. But, after a few days, as the animal was losing ground it became necessary to extract the calf. As removal of the tumor was not possible on account of the wide base of the growth, and as it prevented the calf from passing, the author proceeded in displacing the neoplasm, viz.: producing the appearance of the prolapsus, its return, by pressing on the growth with the hand introduced in the vagina and pushing upon it backwards and outwards, when with the cavity being comparatively emptied, the calf, which was on anterior normal position, was removed without much difficulty. The cow did well for a few days, but finally died. Portions of the neoplasm were examined under the microscope and proved to be of fibro-sarcomatous nature.—(*Rev. Veter.*)

TWO CASES OF DEEP WOUNDS OF THE HEART IN THE HORSE [*MMS. Paris and R. Lassere, Army Veterinarians*]. *First*

Case. Internal hemorrhage due to the perforation of the left ventricle by bony splinter of fractured rib. Mare ran away, has a heavy fall against a projecting stone and she soon presents all the symptoms of internal hemorrhage. She drops after a few minutes, when reaching her stable about two miles off, and dies. Post mortem: Extensive bloody exudation in the pre- and sub-sternal regions with severe bruises of lacerated pectoral muscles on the left side. There is a fracture of the fourth, fifth and sixth ribs of the right side, also of all the left sternal, except the first. The fractures took place at the articulations with the cartilages. They were comminuted. There was a fracture of the sternum. In the thoracic cavity, which is filled with blood there were found a laceration of the pericardium, perforation of the left ventricle by a small splinter, very sharp on both ends and about one and one-half centimeters long.

Second Case. Perforation of the heart with a stable fork. One morning a horse was found dead in his stall with the history that in the habit of getting loose, he started, this last time, running, slipped on the stable floor, fell, got up and returned to his place where he fell down to rise no more. Post mortem: On the left precordial region four little wounds are observed, four or five centimeters apart, running in the same direction, obliquely downwards and forwards. From these, escapes bloody serosity. By careful dissection it is found that the two upper ones are superficial while the others run through the muscles of the chest, the parietal walls of the pleura and the pericardium. On a level with the heart, the lower wound only penetrates into the left ventricle and the whole thickness of the myocardium, thus opening the cardiac cavity. The history given of the accident was untrue, and the horse died from the blow of a fork applied by the stable guard.—(*Revnue Veter.*)

Floating Kidney in a Doe [*G. Ranvier*].—The little beast had lost appetite since several weeks and is much emaciated. Palpation of the abdomen, revealed the presence of a mass as big as an egg which is easily moved about. After incision of the skin and opening of the abdominal cavity this tumor is drawn outside. It was an hypertrophied kidney. Ligature of the blood vessels and excision relieved the doe from her trouble. The animal made a rapid recovery and was soon the mother of a litter of four little rabbits. All were in good health.—(*Rec. de Medec. Vetcr.*)

ARMY VETERINARY DEPARTMENT.

BILL IS NOW A LAW.

"That hereafter so much of section 20 of the Act approved February 2, 1901, as provides that veterinarians shall receive the pay and allowances of second lieutenants, mounted, shall be interpreted to authorize their retirement under the laws governing the retirement of second lieutenants."

Thus, step by step, veterinarians of the army are getting nearer the coveted position of commissioned officer.

We have been several years getting this retirement feature through Congress and feel that justice has at last been given our army confrères in this respect at least.

The profession owes much to Senator Warren, of Wyoming, and Congressman Hull, of Iowa, the chairmen of the Senate and House committees, respectively, on Military Affairs. These gentlemen have done the best they could for us considering the pressure brought to bear by the opposition against any change in the personnel of the army.

In the profession, Schwarzkopf, Jewell, Corcoran, McMurdo, Griffin and Le May, of the army, gave valuable aid.

Outside of the army, our committee extends its thanks to Drs. Clarence Marshall, Hoskins and Schneider, of Pennsylvania; Dr. Hollingworth, of New York; President Glover, of the A. V. M. A.; Dr. Reynolds, of Minnesota; Dr. Cooley, of Ohio; Dr. Dyson, of Chicago; Dr. H. Bannister, of Virginia; Dr. Mayo, of Virginia; Dr. Bahnsen, of Georgia; Dr. Geo. White, of Tennessee.

The following secretaries of state associations are to be thanked for their kind co-operation:

Dr. H. A. Smith, B. A. I. Association, Chicago; Dr. H. J. Milks, New York State Association; Dr. Hal. C. Simpson, Missouri Valley Association; Dr. Burton Rogers, Kansas Veterinary Medical Association; Dr. O. V. Brumley, Ohio State Association; Dr. J. J. Hogarty, California State Veterinary Medical Association; Dr. B. F. Kaupp, Colorado State Veterinary Association; Dr. W. B. Switzer, Oswego, N. Y., Central New York

State Association; Dr. C. H. Babcock, North Dakota Veterinary Association; Dr. C. L. Blakely, Maine Veterinary Association; Dr. S. W. Allen, South Dakota Veterinary Association; Dr. J. P. West, Wisconsin Veterinary Association; Dr. E. P. Flower, Louisiana Veterinary Association; Dr. E. M. Bronson, Indiana Veterinary Association; Dr. R. P. Marsteller, Texas Veterinary Association; Dr. J. T. Seeley, Washington State Veterinary Association; Dr. E. Jackson, South Omaha B. A. I. Veterinary Association; Dr. Judson Black, Michigan State Veterinary Association; Dr. G. E. Leech, Minnesota State Veterinary Association; Dr. D. M. Campbell, Chicago Veterinary Association; Dr. W. G. Crisman, Virginia State Veterinary Association; Dr. A. J. Kline, Northwest Ohio Veterinary Association; Dr. K. G. Huyett, Pennsylvania State Veterinary Association; Dr. J. H. Taylor, Genesee Valley (New York) Veterinary Association; Dr. B. K. Dow, Connecticut Veterinary Association; Dr. E. S. Bausticker, York County (Pennsylvania) Veterinary Association.

Last, but certainly very *great* thanks are due the AMERICAN VETERINARY REVIEW, for its activity in giving this matter publicity.

Very truly yours,

J. P. TURNER, *Chairman.*

VICTORY AND DEFEAT IN ARMY LEGISLATION.

The amendment to the army appropriation bill, providing for the retirement of veterinarians as second lieutenants, has been passed by Congress and signed by the President. This new law will retire Veterinarians Service, Tenth Cavalry; Tempany, Ninth Cavalry, and Corcoran, Twelfth Cavalry. The two former are Civil War veterans, and both over seventy years of age, and the effort made to have this amendment become a law was largely on their account.

But every other army veterinarian justly feels that the right to retirement is a most welcome and valuable addition to our present status, because it safeguards against poverty in old age or against compulsion to leave the army in a disabled condition.

The credit for this little victory belongs entirely to Dr. Turner, chairman of the legislative committee, A. V. M. A. He

was not assisted by more than a handful of army veterinarians. Early in the session he was forced to abandon the bill "to increase the efficiency of the veterinary service of the army," and all that was left to do was to save the retirement clause of the appropriation bill, which he successfully accomplished. This is fully recognized by every army veterinarian and there is an unanimous feeling of gratitude among them for his honest and hard work in our behalf.

But this little victory is completely overshadowed by the crushing moral defeat which we received at the hands of the army dentists, who managed to be advanced over our heads by having a dental corps created, consisting of commissioned dental officers—an entirely new feature in army organization, the whole world over, and certainly a shock to our medical corps.

We ourselves as veterinarians never did entirely acknowledge the claims of the army dentists, about their importance in the army service, nor can we possibly acknowledge that their medical studies are in any manner comparable to the breadth and deepness of those of veterinary medicine, nor, finally, can there be any doubt as to which of these two army services is the more needed and valuable in an economic sense. The general opinion of army officers in these questions is overwhelmingly in our favor.

Yet, notwithstanding these facts, the army veterinarians have failed in legislative attempts for the past thirty years, while the army dentists, after only ten years of a novitiate in our army, have won a signal victory for themselves and for their profession generally, by securing equality with the medical officers of the army.

The explanation of their success offers nothing new. It was won by organized effort. At the buttress of this was a strong pride in their profession, always displayed, along with unity of action and push. Two of three "supervising dentists," were constantly on the battleground with several assistants, all strongly backed by professional influence throughout the United States and by funds provided by the National Dental Association. *They exhibited reports and statistics of the work performed by them in the army to prove the need and usefulness of dental surgeons.* Nor was their victory won easily. Their "Dental Corps Bill" was at once objected to in the House and the conferees instructed to kill it. The dentists refused to give up, fought desperately and won. We certainly must admire them for their well-

planned campaign and congratulate them on their superior skill and tenacity.

This said, the situation leaves us in humiliation, and a comparison between their sweeping ascent and our own little victory will subject us to ridicule in the army, as it has already done. Perhaps just such crushing moral defeat as this was necessary to awaken the AMERICAN VETERINARY MEDICAL ASSOCIATION to a full realization of our weakness in professional affairs, and to finally arouse all of us to action to wipe out the reproach heaped upon us. While the matter is one that primarily affects the profession in the United States, there can be no doubt, from what we know of our Canadian colleagues, that they will heartily join hands with us to correct a great mishap, particularly as their territorial army veterinary force is now fully recognized and organized. It is now up to the *Association* to *act.*

O. S.

INSTRUCTION IN THE INSPECTION OF MEAT FOOD SUPPLIES FOR THE FRENCH AND UNITED STATES ARMIES.

"An army fights upon its stomach."—Napoleon Bonaparte.

The military demonstrations near our Mexican border, begun in March, effective as it will be for the purposes for which it was undertaken, will be in nothing more educationally efficacious than to the Subsistence Department of the United States Army. "An army fights on its stomach." A starved army cannot be expected to be offensively beligerent; an underfed army is not expected to be an army of zealots; a well-fed army is the valorous, the spirited, the redoubtable army which conquers and is ready to conquer more. In its methods for the provisioning of the troops; in the improvement of the ration; in its studies of cookery; in its garrison and field application; above all, in the improved understanding of meats and meat food products, our army to-day is many leagues ahead of what it was a dozen years ago. This has come to pass, in very large measure, through the indefatigable labors of the Commissary General, Henry G. Sharpe, and his spirit, his studiousness, his diligence for improvement of supplies, has imbued the officers under him with keen-edged interest in advanced methods as they could learn of them in other armies and discover them by study, experi-

ment, observation, reading or veterinary counsel. Surely, then, a short article on the instruction in the inspection of meat food supplies for the French and United States armies is timely, in view of the unusual interest at present in the military spectacle on the Mexican-American border; while it may be also poignant or punctuated with pregnant suggestions.

We, who are veterinary officials of the War Department, or who belong to the military organization of the United States, are interested in those who are doing work similar to our own in foreign armies, and particularly in any changes made, which strike us as improvements, that should lend suggestiveness to us. In an article written for the AMERICAN VETERINARY REVIEW, January, 1908, entitled, "An Army Veterinary School; Let Us Have One at Fort Riley." I pointed out that in the Army Veterinary School at Saumur, France, all veterinarians intended for work in the French line are required to undergo a special training before being ordered to a regiment, not only in equitation, hippology, horse-shoeing, military law and other branches, but also in meat inspection. In other words, the man intended for veterinary service in the line, though he be a man who has had the wide training required for military, veterinary candidates in one of the three National Veterinary Schools of Alfort, Lyons or Toulouse, where he has had courses in pathology, bacteriology and applied meat inspection, must, nevertheless, in his special course at Saumur, take another course in meat inspection in its military application—that is to say in such a course he would be put face to face with problems of military meat inspection, be privileged to study them, so that he might be able to solve them practically in the actual work in garrison and field, at home and abroad.

But, of late, French authorities have devised a means to permit veterinarians in the French army to became specialists in the inspection of animals and meats intended for military purposes. In the September, 1910, number of the French meat and milk monthly journel, *L'Hygiene de la Viande et du Lait*, published by H. Martel, Chief of the Veterinary Sanitary Service of Paris, or rather the "Department of the Seine," which includes Paris, there appears an article on changes which are to be made. All meats intended for the French troops are to be inspected entirely by French army veterinarians, as ordered by the government decree of May 1, 1910. The decree provides for the admission, for military training, of a number of veterinarians

to the great Army Veterinary School at Saumur, where they are to go through the regular discipline for veterinarians intended for the French army. They are not, however, to do duty as officers of the line. They are to have the title of "Aide Veterinaire." After the special military training at Saumur is completed they are to be ordered to Paris for special instruction in practical meat inspection in the Parisian abattoirs under Martel, the chief of that service. After passing an oral, written and practical examination in these subjects, they are to enter upon their assigned duty, at such points deemed advisable. Veterinarians of the French army are commissioned officers, and those who are to inspect meats for the troops are to have the same rights, privileges and immunities as these.

French methods ought to have in them something of suggestiveness for us. Several years ago Consul General Mason, of Paris, sent me over copies of the laws and regulations governing meat inspection in Paris and its environs. They opened my eyes to the detailed thoroughness of Parisian inspection, and my studies since of the great French meat inspection journal, edited by Martel, have deepened my impression of the care in inspection, especially in La Villette. Rigor of veterinary inspection of abattoirs is supreme in Paris. An inspiring article could be written upon the subject. Let it suffice for us to know that, in no other place than Paris could French army veterinarians get better special practical training for the military inspection of cattle and fresh meats. We veterinary inspectors of food supplies for the United States Army in Chicago, have more than once been under obligations to the French army, presumably especially to French army veterinarians, for suggestions looking towards improvement of our own supplies. We have conducted experiments along lines indicated in translated documents sent to us from France, through American military channels, and we will be looking for more suggestions with the inauguration of the new veterinary inspection of supplies for the French army which we have mentioned.

We feel, therefore, under obligations to France for stimulation in our own investigations in behalf of advancement of meat inspection methods. But the methods of instruction of French army veterinarians in inspection technique should teach us more, or at least suggest other means for improvement in our own army. Dr. Olaf Schwarzkopf, Third Cavalry, United States Army, who was trained, I understand, under Dr. Robert Oster-

tag in Berlin, and who has made extensive observations of German slaughter houses, has reported in the AMERICAN VETERINARY REVIEW for March, 1911 (page 779), "The Recommendations of the Board of Officers to Revise the Veterinary Supply Table," that "it can be authoritatively stated that hereafter young veterinarians, newly appointed, will be ordered to undergo a course of instruction in equitation and army veterinary practice at the Mounted Service School (Fort Riley) before joining their regiments." This, as an incidental result of the meeting of the Board of Officers, if it turns out to be true, is good news. It will be a start towards the formation of an Army Veterinary School at Fort Riley, such as I suggested three years ago. Nothing is lost by repeatedly recommending changes looking towards improvements. Sir John Falstaff, in Shakespeare's "Henry IV.," speaks of "damnable iteration." But iteration is a virtue in army circles, providing you can repeat your suggestions in a different guise, with more persuasive argument, with more forceful statement so that truth is transparent as the limpid trout brooks in the Maine mountains. I have long appreciated the value of suggestions for the improvement of the meat inspection service for the army. When I was ordered to Washington in 1908, Commissary General Sharpe, who honored me with a long tête-a-tête, suggested that, on my return to Chicago, I should turn over in my mind my observations, take plenty of time and write him, in the fullest manner, all the suggestions I could make for the improvement of our inspection work for the Subsistence Department of the army in Chicago. I did so, and had the pleasure of seeing many of my suggestions carried into immediate effect. Since then, from time to time, I have seen other of my suggestions adopted. In our inspection office we are required to act under a general order, which obliges us to communicate by letter, or call for a conference, on any point or points which occur to us as changes which might be made with advantage to the efficiency of the service. The recommendations that I have thus made would fill a large quarto volume.

The plan for instruction of veterinarians in the inspection of meat or other food supplies for the French army resolves itself into this—instruction in army meat inspection methods for all veterinarians, those intended for the line as well as others, conducted at the Army Veterinary School at Saumur; additional practical abattoir instruction in Paris for army veterinarians.

who are to give most of their time to inspection, under the title "Aide Veterinaire." Both sides of this plan should have something of suggestiveness for us in the United States.

In my opinion it is highly advisable that regimental veterinarians of the United States army know something about practical meat inspection. In their entrance examination for the line, it is true, they must pass in the subject of meat inspection, and this is wise. But this is only the proof of a theoretical acquaintance with meat inspection. Cannot something more be done? There is practical meat inspection work to be done in the army—work which must be expected of line veterinarians. The new manual of the Subsistence Department of the army, issued a few months ago, requires army veterinarians to be called into requisition, wherever and whenever possible, at such times when their services might be of value in the juncture when animals are to be slaughtered, either the property of the United States, or owned by companies at posts, or elsewhere, or when meats, which are subsistence stores, are to be passed upon for wholesomeness or healthfulness. The work of army veterinarians in meat inspection is widening and is destined to widen. Our army veterinarians should have a hand in the inspection of fresh meats from Australia, or in the investigation, before letting of such important contracts, of methods of slaughter there. There is much meat inspection work to be done at times for the army in the Philippines. There is inspection of animals at posts, owned by messes, when they are to be killed.

We are doing something in the way of instruction of army commissioned and non-commissioned officers in meat inspection in Chicago. Chicago is to us what Paris is to army veterinarians in France. Each is the most important meat inspection centre. It is reasonable that officers of the army, who desire instruction in meat inspection, or who are required, under orders, to learn meat inspection, should be taught it at the centre of the industry. The opportunities Chicago offers our officers for this kind of information cannot be gainsaid. By far the largest share of meats for the army is bought in Chicago. The purchasing officers in other centres are required to look to Chicago as the central office for this class of supplies. Hence the Purchasing Commissary of the army in Chicago has come to be a very important official, and his responsibilities have increased greatly during the last few years. Up till a few days ago, for instance, the Purchasing Commissary in Chicago, was Major H. E. Wilkins,

who was Depot Commissary at Havana during the recent occupation of Cuba by the Army of Pacification, and who represented the Ward Department in San Francisco during the earthquake, when the army took over the work of provisioning the sufferers. He is now Chief Commissary at San Antonio, Texas, for the Division which is near the Mexican border.

The instruction of army officers in meat inspection, carried on in Chicago, has been in operation for ten or more years, that is, since reorganization after the Spanish War. A large share of the commissioned officers of the Subsistence Department, now holding important posts as purchasing officers, have, some time or other, been drilled in Chicago in meat inspection. It seems to be the steady policy of the department to order newly appointed commissaries and commissary sergeants to Chicago, as student-officers, to take such a course. The officers in charge of the Cooks' and Bakers' Schools of the army have benefited by the instruction in Chicago, and have attested its usefulness. There is hardly any time of the year when one or more, and sometimes three or four, of these officers are here as students. The work of instruction is carried on practically entirely by the army veterinarians of the Subsistence Department in Chicago, acting under orders from the Purchasing Commissary. The length of time instruction is given, in individual cases, depends on the application of the student, his abilities, and the exigencies of the army service. Some stay a month or six weeks; others many months.

The net result has been favorable to the advancement of veterinary affairs in the army. Great confidence has been placed in the army veterinary (commissary) inspectors and many privileges, very unusual to civilians, as they are, have been accorded them. The responsibilities of this class of men are bound to increase in time of war, even when a military demonstration is made, as in the Mexican boundary situation. In the present exigency, for instance, an advance in the confidence in them is shown. A few days ago, when the troops were mobilized in Texas, my associate in the inspection in Chicago, Dr. C. W. Johnson, was immediately ordered for duty to San Antonio to inspect animals, fresh meats, and other supplies, under the direction of the Chief Commissary of the Division, Major Wilkins; while all the responsibilities of the inspection of meat food supplies to be prepared in Chicago for the whole army were given to the writer, under orders from the Purchasing Commis-

sary here. This is an immense change since the Spanish War days, when a pseudo inspection, a weak, half-hearted, spasmodic, uninterested, disloyal, induteous examination was made of the supplies, by men representing the Chicago Board of Trade.

All this throws light on the question of the instruction of United States Military Veterinarians in the inspection of meats and meat food products. If the French view be taken, regimental (line) veterinarians should have special instruction in meat inspection, along with other courses on army veterinary practice, before they join their regiments for the first time, by a veterinarian practicing meat inspection in the War Department. This should be done if the proposal is carried out, when the young appointee is ordered to Fort Riley—the same as the young French military veterinarian is taught meat inspection at Saumur. Those veterinarians who are to give up their whole time to such inspection should, like the "aide veterinaire" in the French military system, belong to the United States military establishment, and they should undergo some special training, as does the veterinarian who is a novice in the French army; but should receive this special training in practical meat inspection in Chicago before entering upon their life work as meat inspectors for the United States military authorities. The union of all veterinarians in the army into a Veterinary Corps is an eventuality which at the present hour seems anticipatory; but which must be a development in time. The logic of events veterinary in the army will bring that to pass in time. The most cannot be gotten out of veterinarians serving, at present, the various army departments, Quartermaster's or Subsistence Departments, as civilians, until they are amalgamated with the military organization. I am absolutely certain that, in my day or your day, this will be an eventuality. "Every mickle makes a muckle," as the Scotch say. Little by little we are advancing towards that end—organization of all into one—a veterinary corps.

D. Arthur Hughes.

Dr. Walter Fraser, Thirteenth Cavalry, U. S. A., has been transferred from Fort McKinley, P. I., to Fort Riley, Kansas.

The Manitoba Veterinary Association held one of the most successful meetings at Winnipeg, February 15, that the organization has ever had. A detailed report of it will be published in the May issue of the Review.

SOCIETY MEETINGS.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-eighth annual session of this association was opened at Columbus, Ohio, in the Veterinary Clinic Building, Ohio State University, January 17, at 1 P. M.

The members were welcomed to the city by Mayor George S. Marshall, as follows:

Mayor Marshall's Address.

Mr. Chairman and Delegates to the Convention of the Ohio State Veterinary Medical Association:

It is my duty as well as my pleasure frequently to address conventions that assemble in Columbus from time to time. You may be interested to know that there are as many conventions held in the City of Columbus as there are working days in the year; so that it is no small duty of the chief executive to address these conventions and I am usually honored with an invitation to make an address of welcome. The frequency and the interest shown in these conventions is an excellent indication of the wonderful activity that there is going on in all departments of life in these days; in fact, it appears to be an era of association and of organization for the mutual benefit of all concerned. Men interested in a particular line of work, get together for their mutual benefit and mutual help.

This morning I had the honor of delivering an address of welcome to the United Mine Workers of America, represented by over 2,000 delegates from every mining state in the Union and portions of Canada and Mexico. These men in their homes and at hard work in the mines, have been thinking of the great questions which concern them. So it is with all groups of men in a particular line of industry or profession.

I do not recall the beginning of veterinary work in this state, because, as your chairman has indicated, this is the twenty-eighth annual session. However, I do recall the early days of the Veterinary Department at Ohio State University. When I

entered in the fall of 1889, there was no distinct department of veterinary medicine as I remember, although a department existed in connection with the agricultural department, but there was no separate building. The head of the department had a very small group of men gathered about him interested in that subject. I have seen that subject developed at the State University, and the growth has been very encouraging and very rapid.

When I was a boy on the farm, I am sure that our veterinary surgeons knew very little about the horse. Now veterinary medicine is placed upon an exact scientific basis or as much as it is possible, subject of course, to development.

I am surprised indeed at the number of representatives here and I understand that all that are qualified to be members are graduates in veterinary medicine. This means a great deal to the profession the members of whom are graduates and are professionally pursuing the subject.

The two old horses that we used when I was on the farm were there when I was born and were still there when I left and I do not think that they were ever sick a day in their lives. I do not know why they never got sick, as they were used in all kinds of weather for all kinds of service. Another interesting fact is that I never knew a time when fruit was not plentiful on our farm. I could not understand why men were studying these particular branches of science. I now find that I cannot even make a pear or apple tree grow in my backyard. I tried this some time ago, but was disappointed. And I have not had a peach, apple or pear since other trees that I have were planted. Now, I do not know whether it is because of conditions that are existing in the country here or whether it is due to bacteria, insects, flies and the like that are now infecting our fruit, and I do not know whether it is because of the manner of the treatment of our horses on the farm or whether there have been new attacks made upon them from different sources. And animals in the city cannot be successfully treated unless the knowledge gained in the last quarter of a century is applied. As these diseases have arisen with the horse, the cow, the sheep and other animals, there has developed a course of investigation of the causes of such diseases together with their remedies and you men are here in Ohio to give the animal kingdom that degree of skill which it seems is now necessary for the existence of the animal kind.

I understand that there is not only one veterinary college in Ohio, but that we also have one in Cincinnati which is doing excellent work, as I understand.

As chief executive of the City of Columbus, it gives me great pleasure to welcome this splendid body of men to our capital city. I thank you for your time and attention.

RESPONSE TO ADDRESS OF WELCOME BY DR. WALTER SHAW.

On behalf of this Association, it gives me great pleasure to accept your kind welcome to the city.

You see before you these silver haired veterinarians who have attended many of our meetings and have seen great advances in the profession. They will see that we younger fellows make no mistake.

It is not alone the duty of the veterinarian to administer and care for the needs of the individual patient, but to protect the herds and flocks of this country against contagious and infectious diseases; and by so doing, protect the public health against diseases communicable from animal to man. There is a great yearly loss in this and other states from diseases that could have been prevented. Carelessness is principally the cause of such great losses, particularly that of transportation, when diseased animals are shipped and allowed to mingle with a healthy herd. If this unnecessary loss is prevented, the price of all dairy and meat products will go down. This will be of great benefit to both the producer and the consumer. Ohio to-day is made the dumping ground of many states for their diseased stock. This state of affairs should not exist. This should be controlled by seeing that no animals enter having a contagious disease. Ohio needs more veterinarians in the field to control and prevent contagious diseases.

If it is the will of the people to remedy existing conditions and the legislature will pass the necessary laws, the veterinary profession can furnish the men.

I wish to direct your mind to the deans and professors of some of the best colleges and also that we have some of the very best men in bacteriology, anatomy and pathology. We have the greatest anatomy of domesticated animals that was ever published. We saw, during the past twenty years, parts of it in preparation, but when it came to our hand it surpassed all expectations.

On behalf of the association I again thank you for your kind welcome to the capital city.

The roll call showed eighty-four members to be present at the opening of the meeting.

Following the reading and unanimous approval of the minutes of the meeting held in January, 1910, the president delivered the annual address.

President Cook's Address.

Gentlemen and Fellow Members of the O. S. V. M. A.:

As I understand it, the principal purpose of this organization is to look after the general welfare of the veterinary profession and to promote and protect its interests in the State of Ohio.

The association is now twenty-eight years old. Now, let us reflect and see whether or not it has performed its full duty to the profession during that time. Let us ask ourselves the following questions:

What part did this organization take in the struggle to bring about the enactment in 1894 of the law regulating the practice of veterinary medicine and surgery in this state?

What part did this organization as a whole play in the several attempts since made to strengthen that law?

The last General Assembly of Ohio amended that law and made some very desirable and important changes in it, but what part did this organization as a whole take in getting these amendments through?

What voice has this organization had in the appointment of members of our State Board of Veterinary Examiners?

What voice has this association had in the appointment of a State Veterinarian for Ohio, or in the selection of his assistants, or in appointments to other public veterinary offices in the state?

What has this association done toward the development of the Veterinary Department of our great State University or for the cause of veterinary education in any direction?

Since the profession was vitally interested in all of these matters, it appears that its representative organization should have taken an active part in each. But did it?

Let us go a little farther and ask: What has this organization ever done toward the lessening and final eradication of veterinary quackery in the state—a *growing* evil which seriously affects the opportunities of our young members and reflects public discredit upon our whole profession?

Then we might ask if the association enjoys the confidence of the whole profession in the state? It certainly should, but the fact that seventy-eight per cent. of the graduate veterinarians in the state are not included in its membership, indicates that it does not.

Then, again, why the painful indifference of so many of our members, who rarely even attend our meetings?

In my opinion, the evident indifference among our members and the lack of confidence, support and co-operation of a majority of our professional brethren in the state are due to the inactivity and inconsequence of the organization in veterinary affairs in the past.

These sins of omission are brought to your attention at this time solely in the hope that some corrective action may be taken before this session ends. This organization must at once become an active, alert and efficient representative and guardian of the profession's interests throughout the state. To this end, your president makes the following recommendations:

That the Board of Censors be charged with the duty of looking after the general welfare of the profession while the association is not in session and with doing all possible to promote and protect its interests, and more specifically, to be charged with the duty of planning and executing an active campaign against veterinary quackery in this state. With a competent and willing executive committee, active between sessions, this association's influence for good will be felt in veterinary affairs throughout the state and its usefulness will be appreciated by every member of the veterinary profession.

It is also recommended that the holding of banquets be discontinued. There is plenty of evidence that banquets are not popular with the rank and file and the time can be much more profitably spent. A banquet is scheduled for this meeting, contrary to the advice of your president. We all know the difficulty of holding together a meeting of busy practitioners for more than one afternoon and evening, then why waste a big part of such valuable time in banquets? I take it that members spend their time and money in attending meeting in the hope of aiding in the cause of veterinary progress and no good can come through banquets.

It is also recommended that your literary programs for future meetings be limited to a few high-class papers on scientific problems of the day bearing on veterinary science. Papers on

commonplace subjects and case reports can be printed in veterinary publications and read and digested at home and at our leisure. Clinics too, should be held only when there is something new to be demonstrated. Let us spend our valuable and limited time hereafter in thoughtful deliberation on ways and means of advancing our profession.

Resolutions in line with these recommendations have been prepared and will be introduced at this meeting and their adoption is earnestly recommended.

During the past month, your president has taken a census of the veterinary practitioners in the state. Names and addresses of all persons practicing veterinary medicine and surgery either legally or illegally in the state at this time, were obtained. This information should prove invaluable to the association in its deliberations at this meeting. From the information obtained, the following figures are taken:

Number of graduates practicing legally	220
Number of graduates practicing illegally	146
Number of non-graduates practicing legally	79
Number of non-graduates practicing illegally	781
Total number of legal practitioners	299
Total number of illegal practitioners	927
Number of veterinarians in the state eligible to membership in this association whose names are not enrolled	314

These figures furnish good food for serious thought and plenty of room for action and you are urged to get together and do something.

Now, just a final word of warning. The veterinary profession of Ohio could not ask for a better protective law than it has to-day.

All that is necessary now is to enforce the law, but its enforcement must be gone about judiciously and in such a way so as not to arouse public sentiment against it. Veterinary quackery can be eradicated, but not in a day. It will take a few years to do it. Every quack has some friends and since the sympathy of the public is naturally with the under dog, some degree of caution will be necessary in the campaign against him. All steps toward the enforcement of the law should, therefore, be left to a single board composed of men fitted for the work and this board should have absolute control. Indiscriminate prosecution and persecu-

tion of non-graduate veterinary practitioners by individual members of the profession, will surely do the cause much harm. No member of this association should personally attempt a prosecution of a business competitor or even discuss in public the merits of the law. Hundreds of non-graduate veterinary practitioners in the state slept on the privilege granted them in the law, to obtain, without examination, a license to continue in practice and these men are now appealing to the Legislature for relief and it is probable that the veterinary profession will have to fight hard to prevent amendments favorable to the empiric, but detrimental to the profession, being made. Mind you, these men are strong in number, and if properly organized, will bring powerful influence to bear on the Legislature. Already one big daily paper has taken up their cause and printed editorials calculated to create public sentiment in favor of the amendments to the law provided for in a bill introduced in the state Senate a week ago. If the law is tampered with at all, it will be made to allow practically anyone wishing to engage in the practice of veterinary medicine and surgery an opportunity to obtain a state license and this will mean the licensing of not less than a thousand persons who have not had college training for the work. The effects of such an amendment would be disastrous to your interests and I would urge you right now to prepare to resist the attack. A copy of the bill has been obtained and will be read later in the meeting. In view of this impending danger, I would urge you to exercise great care in the selection of your officers for the coming year. When selecting officers, remember that "good fellows" do not always make good executive officers and leaders. With "dead ones" in office next year, the profession's interests will be in extreme jeopardy and your association will be without force and consequence. You will need officers who are capable of mustering the 300 licensed veterinarians in the state into a united army of defence to resist the efforts now being made to amend the law that so vitally affects your interests. With efficient officers to organize and direct the available forces of the profession, any attack on the law can be successfully resisted. Since the duties of the officers will require considerable time, the offices should not be given to or accepted by members who, on account of private interests, cannot give the necessary time to the work of the association. Elect only able, wide-awake and tactful leaders to the offices of president and secretary and to the vacancy in your Board of Censors. The criticisms and the

recommendations made and the alarm of warning sounded are not intended to give offense nor to create a scare, the sole object being to arouse you from your state of lethargy to your full duty and to advise you of imminent dangers ahead. The veterinary profession in Ohio looks to this organization for protection. It is an obligation you have voluntarily assumed and it's now up to *you* to make good.

Following the president's address, and presentation of a number of resolutions by Dr. Cook, the election of officers took place, and resulted as follows:

President, Dr. Louis P. Cook.
Vice-President, Dr. G. W. Cliffe.
Secretary, Dr. C. V. Brumley.
Treasurer, Dr. David S. White.

DR. COOK: "I would like to have the privilege to suggest a man to be appointed on the State Board of Health who is a member of this association. It seems to me that it is due us. We have now elected a governor and it will be his duty within the next few days or weeks to name three members of that Board, two Democrats and one Republican. I know whereof I speak when I say that the man whom I am going to ask this association to endorse stands as good a chance as any other member of this association—Dr. Cliffe for Democratic nominee on the State Board of Health." Dr. L. P. Cook introduced above motion.

A standing vote was taken and Dr. Cliffe unanimously elected to represent the association as their nominee.

DEATH OF DR. COTTON.

The following report was made by Dr. W. H. Gribble:

"Dr. T. Bent Cotton was born in Mt. Vernon, Ohio, March 21, 1841, and died in the same city, January 6, 1911. He had been in frail health for several years, but was active until stricken with paralysis about four days previous to his death. In early life Dr. Cotton was a carriage blacksmith, but his love of animals induced him to study veterinary medicine. He graduated from the Ontario Veterinary College on March 31, 1882, and located for practice in his native city, at once taking a leading position in his chosen profession.

He was an honorary member of the Academy of Veterinary Science and Comparative Pathology of New York State, to

which he had been elected January 8, 1886. He was a member of the American Veterinary Medical Association, in which he had held many offices. He was one of the organizers of the Ohio State Veterinary Medical Association and up to two years ago was one of its most active workers. A years ago he asked to be released from active membership and was at once unanimously elected an honorary member.

In the removal from our ranks by death our brother T. Bent Cotton, this association has lost one of its charter members and one of its most active and willing workers, ever ready to lend a hand in the upbuilding and advancement of the veterinary profession.

While his presence will be missed from our meetings and his advice from our councils, it will in no way compare with his being missed from his family circle.

We extend our heartfelt sympathy to the widow and daughter in this their bereavement.

WHEREAS, While his presence will be missed from our meetings and his advice from our councils, it will in no way compare with his being missed from his family circle, be it

RESOLVED, That we extend our heartfelt sympathy to the widow and daughter in this, their bereavement, and venture to suggest that " Mayhap he is better off."

(Signed) WM. H. GRIBBLE.

READING OF PAPERS.

" Remarks on Applied Anatomy," by Doctor S. Sisson.

Dr. Sisson was given a very elaborate introduction by Dr. Cliffe, in which he introduced our distinguished brother as the " Wizard of the Twentieth Century in Anatomy," and that the doctor has produced the greatest anatomy on this or any other continent. To which the doctor replied in his quiet way, " Mr. President, Mr. Chairman and Members of the Association, I feel considerably embarrassed, as you might easily understand, under the present circumstances. I do not know that I need to say anything further than that."

" Opsonic Index and Its Benefit in Practice," Dr. John T. Gruber.

Dr. S. R. Howard read a very interesting paper on the " Use of Slings in Veterinary Practice."

Dr. Reuben Hilty favored the assemblage with a very interesting paper on Azoturia.

Dr. C. B. Frederick also presented a very interesting paper on that small yet great word, " If."

" Tuberculin Test of Cattle," was the subject of a very interesting paper by Dr. Paul Fisher. Dr. Fisher also showed some charts demonstrating various features of the tuberculin test in cattle. Here are a few of the points:

One animal showed reaction, but on post mortem, no lesions could be found and the dissector was despairing, when he opened the skin over the knee and found a small lesion there.

One herd had an animal which did not react until the nineteenth hour.

The eighteenth hour is as early as one dare stop taking temperatures and the eighth hour in the morning is the latest that one dares to begin to record them.

One herd did not react in that the temperature stayed at the highest point a very short time, but post mortem revealed definite lesions.

Previous history is very important, no matter what the tuberculin test shows.

Temperature is recorded three times before injection and every two hours after, from the eighth to the eighteenth hour or longer if temperature rises at the eighteenth hour.

Dr. C. W. Fogle read an interesting paper on " Treatment of Choke in the Horse."

Dr. H. Fulstow also read an interesting paper on " Some Diseases of the New-Born Foal."

Resolution.

Whereas, Diseased animals, especially glandered horses, tubercular cattle, cholera-infected swine, and scabby sheep are transported into Ohio from other states without restriction, and

Whereas, Our present laws do not provide for the enforcement of measures to stop this practice which causes enormous losses to our animal industry, be it therefore

Resolved, That this association recommend and urge the enactment by the General Assembly, now in session, of a suitable, modern, live-stock law.

Motion was made and seconded to adopt the above resolution. Same was carried by acclamation.

RESOLUTION.

"I move that a resolution in behalf of the Ohio State Veterinary Medical Association be extended to Dr. Hilty and his collaborator, Dr. Longfellow, to continue the research work in the state on Azoturia, the report to be made at the next meeting.

Question called and carried by acclamation.

RESOLUTION.

It was moved by Dr. Shepherd and seconded by Dr. Carl, that the president and secretary act as a committee to give the reasons for the objection to the present law in the legislature or rather the proposed amendment.

Motion was carried by acclamation.

RESOLUTION.

RESOLVED, That at future meetings of this association, the secretary extend a cordial invitation to all persons who are not members of this society, who are college graduates and persons that we would like to have in our society. Also, that he request the members of the association to bring in such members of our profession as would make desirable members of this association.

Secondly, That the secretary get a registrar and register and have this registrar posted outside the door, his duty being to collect dues and to tag each member on receipt of same, as a member.

O. V. BRUMLEY, *Secretary.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association was held at the San Francisco Veterinary College, 1818 Market St., San Francisco, on December 14, 1910.

The meeting was called to order by the president, Dr. David F. Fox, of Sacramento.

Roll call showed the presence of the following members: Drs. R. A. Archibald, H. A. Spencer, D. F. Fox, C. Keane, E. J. Creely, J. Boyd, A. J. F. Bateman, G. J. Donnelly, C. L. Megowan, H. A. Turner, A. J. Sorensen, J. A. Hill, A. S. Will-

iams, O. A. Longley, C. F. McCarthy, L. E. Tuttle, C. H. Haring, T. L. Dardis, F. H. McNair, H. E. Torgersen, J. P. Iverson, F. J. Ast, J. J. Hogarty.

The following visitors were present: Drs. J. A. Grau, C. L. Roadhouse, C. F. Edwards, Attorney James Creely, Dr. Zeig, agent of Parke, Davis Co., and students of the San Francisco Veterinary College.

The minutes of the previous meeting were read and approved as read.

The secretary's annual report was submitted, and upon motion, duly seconded and carried, it was accepted and ordered placed on file.

Owing to the absence of the treasurer, Dr. W. F. Betzold, there was no report rendered.

The proposition of holding at least one joint meeting annually with the Southern Auxiliary was discussed at length and it was the opinion of several present that the matter should be taken up with the Southern Auxiliary to ascertain whether or not said meeting consisting of two days could be so arranged.

Under the head of Reports of Committees, Dr. R. A. Archibald, chairman on the Committee of Arrangements of the A. V. M. A. meeting, rendered the following report:

Report of the Entertainment Committee for the American Veterinary Medical Association.

Mr. President and Members of the California State Veterinary Medical Association, and Mr. President and Members of the Southern Auxiliary of the California State Veterinary Medical Association:

Your committee appointed for the purpose of entertaining those who attended the meeting of the American Veterinary Medical Association in San Francisco, during September, 1910, begs leave to report that there still remains a balance of $68.29, a check for which is herewith attached.

It may seem to the casual observer that a large amount of money was spent, but your committee assumed that it was better to give the best entertainment possible with the amount of money available, providing such entertainment did not exceed the amount of money collected; consequently in every step taken

it endeavored to get the best obtainable under the circumstances.

As chairman of the committee I desire to express my appreciation of the assistance and support given me by the individual members of the committee and subcommittees. I do not desire to make special mention of the work of any individual member, but without exception everyone performed every task required of him at all times and under all circumstances.

I wish to make special mention and call attention to the great kindness and courtesy displayed by Dr. W. F. Egan, of San Francisco, who placed at our disposal his premises on Webster street, for the use of our clinic, and not only that, but he fixed up the place especially for this occasion at considerable personal expense. He also took charge of clinical cases, before and after the clinic, which was all done, as far as the committee can ascertain, for less than cost.

I cannot close this report without complimenting the members of the veterinary profession in California for the noble manner in which they came to the front with funds and assistance for the purpose of carrying this great undertaking to a successful termination. No other city or community, in this or any other country in the history of veterinary affairs has ever accomplished like results, and when we take into consideration the extent of the veterinary population in this state the results are still more remarkable.

I also desire to call attention to the kindness of the Montana Veterinary Association, who sent us a check for fifty dollars ($50), and special mention should be made of the kindness and liberality of Drs. Jacobs, Mack, Richardson, Steward, Dill and Drake, of Nevada, who assisted with liberal subscriptions. Mention should be made in this connection of the liberality of the following business houses who subscribed to the entertainment fund: Mulford Co., Abbott Alkaloidal Co., Sharp and Smith, Cutter Laboratory, Haussmann and Dunn, Parke, Davis and Co., and Alexander Eger.

Respectfully submitted,

R. A. ARCHIBALD,
Chairman, Committee on Entertainment.

Dr. R. A. Archibald turned over to the secretary a check for $68.29, as a balance of the A. V. M. A. Entertainment Fund.

It was duly moved, seconded and carried, that the report be

adopted and that the committee be discharged. The president, Dr. D. F. Fox, expressed his deep appreciation and thanks to the chairman and committee for their earnest endeavors in making the meeting such a success.

After a lengthy discussion as to the disposal of the check for $68.29, Dr. R. A. Archibald said he thought that it should be spent. He said the proper way would be to appoint a committee to devise ways and means to spend said money. It was moved by Dr. Keane and seconded by Dr. Boyd that such a committee be appointed.

The president appointed Dr. Charles Keane to act on this committee and requested him to take up the matter with the Southern Auxiliary members to ascertain their opinion in this matter.

The following applications were received, accompanied with the initiation fee: Drs. Chester L. Roadhouse, Berkeley, Calif.; W. M. Thompson, Red Bluff, Calif.; C. F. Edwards, Gilroy, Calif., and were referred to the Board of Examiners to be reported upon at the next regular meeting.

The Board of Examiners reported favorably upon the application of Dr. H. E. Torgersen, a graduate of the Chicago Veterinary College. Upon motion, duly seconded and carried, Dr. H. E. Torgersen was elected to active membership in the association.

Dr. R. A. Archibald brought up the proposition of districting the northern part of the state in order that we might get the veterinarians who are not members to become such, whereupon the president, Dr. D. A. Fox, stated that he had overlooked the matter on account of his time being taken up with matters pertaining to the meeting of the A. V. M. A., but hoped in the coming year the association would make an effort to put this proposition into effect.

Nominations and election of officers for the ensuing year resulted as follows:

President, Dr. Otis A. Longley, of Fresno.

Vice-President, Dr. A. J. Sorensen, of Modesto.

Secretary, Dr. J. J. Hogarty, of Oakland.

Treasurer, Dr. J. A. Hill, of Alameda.

Board of Examiners—Drs. H. A. Spencer, P. H. Browning and E. J. Creely.

It was duly moved, seconded and carried, that the secretary be instructed to cast a ballot for the respective officers.

It was moved by Dr. Archibald, and seconded by Dr. Keane, that a committee be appointed to amend and revise the by-laws of the association. The president appointed the following to act on said committee: Drs. R. A. Archibald, Charles Keane and C. L. Megowan.

The president then declared a short recess until 2.00 P. M. At 2.00 P. M. the members assembled at the San Francisco Veterinary College to witness a clinic prepared for them by Dr. Hall and the faculty.

At 8.00 P. M. the association reconvened for the purpose of reading of papers and discussions.

Dr. C. A. Pyle read a paper entitled, "Preventive Treatment of Hog Cholera," which proved to be very interesting and brought forth a general discussion.

Dr. R. A. Archibald being called upon explained in detail the different tests for glanders, particularly the Konew test, which proved most interesting and instructive.

Dr. C. L. Roadhouse being called upon read a paper entitled, "Veterinary Inspection of Certified Dairies," which promoted a very lengthy discussion.

Matters pertaining to legislation were discussed at length and Dr. R. A. Archibald was of the opinion that our present law was a good one and that it should be carried to the Supreme Court for a ruling from that tribunal as to its legality. He thought that it would be poor policy to interfere with the present law.

Attorney James Creely being present was called upon by the president and expressed his opinion on the matter. He said that the present law was a good one and thought it would stand the test. Mr. Creely kindly enlightened the members as to the legal questions involved in enforcing this law.

It was duly moved and seconded that when the committee on legislation visits Los Angeles that said committee take the matter up with the Southern Auxiliary and that they be given full power to act.

Dr. Charles R. Keane explained to the meeting the proposed bills to be submitted to the next legislature. They are:

A. Bill to provide funds for a laboratory in connection with the office of State Veterinarian to be used for the purpose of preparing hog cholera serum and for general laboratory purposes and providing for the appointment of a Veterinary Bacteriologist and Pathologist.

B. Bill regulating use of Tuberculin, Mallien and other biological products in California, special tax on horse and mule industry, to provide a fund out of which to indemnify owners for the destruction of glandered animals.

C. Bill providing for the testing for tuberculosis, segregation, and marking of reacting animals in at least the breeding herds in this state.

It was moved, seconded and carried, that the measures proposed by Dr. Keane be endorsed by this association.

It was duly moved and seconded that the next meeting be held at Fresno on the second Wednesday of March, 1911.

It was moved, seconded and carried, that a vote of thanks be extended to Dr. A. V. Hall and the students of the San Francisco Veterinary College for their excellent entertainment. It was also moved and seconded that a vote of thanks be extended to the essayists, Drs. R. A. Archibald, C. L. Roadhouse and Dr. C. A. Pyle.

There being no further business to come before the association upon motion, duly seconded and carried, it adjourned to meet in Fresno on the second Wednesday of March, 1911.

J. J. HOGARTY, *Secretary.*

THE CLINIC OF CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

1. Excision of the ventricle for roaring (Adams' method).
2. Periosteotomy for ringbone.
3. Resection of the perforans tendon.
4. Median neurectomy.
5. Plantar neurectomy (high).
6. Plantar neurectomy (low).
7. Excision of lateral cartilage (not cutting coronary band).
8. Anterior and posterior tibial neurectomy.
9. Spaying of cat by flank method.
10. Spaying of two bitches.

Note.—Cat and bitches all recovered, also the horse receiving two doses (20 c.c. each) of Cannabis Indica in the jugular vein remained quite from 4.00 P. M. until 8.00 A. M. It got up next morning showing no bad effects from the drug.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

This association was called to order by the president, Dr. L. A. Forge, at Madison, January 10, 1911. The roll call showed a goodly number of the members in attendance. The reading and adoption of the minutes of the previous meeting, and the secretary-treasurer's report, were followed by the reports of the several committees.

Twenty-six applications for membership were tendered the secretary and referred to the Board of Censors to be reported on at the evening session.

Election of officers followed and resulted as follows:

President, T. H. Ferguson.
Vice-President, —. —. Holmes.
Secretary-Treasurer, J. P. West.

Dr. D. B. Clark, as delegate to the San Francisco meeting of the American Veterinary Medical Association, gave a very interesting report, thoroughly covering the ground of the last meeting of that society, as well as the pleasant features of the trip to and from the Coast. Dr. Clark's report was much appreciated and regularly accepted.

Dr. Dreher's able paper on "The Use of the Stomach Tube in Gastritis," was much appreciated by all members present. It brought out much discussion and was well defended by the author, who was excused with a vote of thanks.

A paper by Dr. A. H. Arpke, subject, "Pericarditis," brought out many interesting discussions by Drs. Roub, Hensel, Holmes and others. The doctor was excused with a vote of thanks.

The meeting adjourned to reconvene at 7.30 P. M., with President Ferguson in the chair.

Dr. M. P. Ravenel favored the society with a very interesting talk on that broad subject of tuberculosis, giving briefly the experiences of investigators with the later methods of immunizing cattle against this disease. The doctor was excused with a vote of thanks.

Herbert Lothe, secretary of the Live Stock Sanitary Board, gave an interesting paper, subject, "Relation of the Live Stock Sanitary Board to the Veterinarian," in which he made many instructive suggestions to the practitioners, and showed the importance of the two working harmoniously.

Dr. Hadley's paper relative to "Recent Research Work and Diagnosis of Glanders" brought out much discussion, which was well defended by the author, who was excused with a hearty vote of thanks.

Many interesting subjects were discussed by Drs. L. A. Wright, J. F. Roub, C. M. Crane and T. H. Ferguson.

The censors reported favorably upon the twenty-six applications for membership. The rules were suspended and they were voted members collectively.

The meeting adjourned to reconvene for clinics at 8.30 the following morning at Dr. J. P. West's infirmary.

The entire forenoon of the second day was devoted to clinics.

Dr. H. F. Eckert presented a paper on "Laparotomy," which was well received and highly applauded by the society.

Dr. L. A. Wright gave a very complete report of the veterinary law and the workings of the "Board," comparing same with other states.

Dr. D. B. Clark gave a very lengthy talk covering the subject of cattle testing by veterinarians and other parties authorized by the Wisconsin Live Stock Sanitary Board, and spoke also of the increased work of the Sanitary Board.

Dr. J. S. Atkinson's interesting paper on "Azoturia," in which the doctor cited many cases of his own experience in the treatment of the same, brought out much interesting discussion by members of the society. The doctor was excused with a vote of thanks.

Dr. B. F. Kenyon's able paper on "Impaction," citing many cases of his own experience, his treatment of the same and results, brought out much discussion by Drs. Roub, Crane, Atkinson and others.

It was moved, seconded and carried that the society hold its semi-annual meeting at Green Bay.

Moved, seconded and carried that the date of the meeting be left to the secretary.

Moved and seconded that Drs. Ravenel, Alexander and Hadley be tendered a vote of thanks for the interesting contributions to the program, and interest shown in the society.

Moved and seconded to adjourn to the banquet, which was held at the Capital House at 7.30. Nearly two hours were pleasantly spent at the banquet held in the Capital House; Dr. D. B. Clark acting as toastmaster.

At 10.00 President Ferguson again called the meeting to order.

Moved and seconded to elect a candidate to represent the society at the American Veterinary Medical Association.

Dr. L. A. Wright was officially elected as the delegate to represent the society.

Volunteers for papers for the semi-annual meeting were: Dr. Abbott, Dr. Wanke, Dr. Hensel, Dr. F. F. Eckert, Dr. Reinhard, Dr. Palmer, Dr. Schneekloth, Dr. Edwards, Dr. Brown, Dr. H. F. Eckert, Dr. Howes, Dr. Curtis and Dr. Hollister.

Regularly adjourned, to meet at the semi-annual meeting.

J. P. WEST, M.D.V., *Secretary.*

NORTH DAKOTA VETERINARY MEDICAL ASSOCIATION.

The ninth annual meeting of the above association convened at Hotel Gardner, Fargo, N. D., Tuesday morning, January 17, 1911.

President C. H. Babcock called the meeting to order at 10 A. M. and delivered the annual address.

Roll call showed twenty-five members present. The following visitors were also present: Dr. L. A. Merillat and Dr. D. M. Campbell, Chicago, Ill., and Dr. Oscar Johnson, Hatton, N. D. The minutes of last meeting read and approved.

After listening to committee reports and transactions of routine business the following gentlemen were elected to membership in the association: Edmund Mackey, M.D.C., Mandan, N. D.; H. Anderson, V.S., Dickinson, N. D.; G. Hammond, M.D.C., Litchfield; G. E. Slonlin, V.S., Aneta, N. D.; E. W. Elliott, V.S., Milton, N. D., and E. D. Harris, D.V.M., Fargo, N. D.

Next on the program was reading and discussion of papers.

1. "Swamp Fever, Facts and Problems," by Dr. L. Van Es. Dr. Van Es did not read a paper, but discussed the subject very fully, illustrating his talk with numerous drawings, and giving the results of the painstaking research work done at the North Dakota Experimental Station for the past three years. A report

of this work, together with the information Dr. Van Es has gleaned from his labors will, no doubt, soon be published as a station bulletin.

2. Dr. E. J. Walsh presented a specimen of "thrombosis," of external illiac artery of the horse together with a clinical description of the case.

3. "Tuberculosis," by Dr. M. M. Fulton.
4. "Tetanus," by Dr. F. J. Anderson.
5. "Bacterins," by Dr. D. Fisher.
6. "Some Excitement," by Dr. E. Schneider.

At 8.00 P. M., January 17, 1911, thirty-eight members and visitors enjoyed a sumptuous banquet at the Hotel Gardner.

Wednesday, January 18, 1911, association met at the Agricultural College. The forenoon session was taken up by Dr. Merillat in a masterly presentation of the subject of "Neurectomies of Veterinary Surgery,"* followed by a brief, but pointed, talk on the treatment of wounds in a modern, scientific manner. Dr. Merillat made an earnest plea for a cleaner and more scientific surgery as the best means of competing with our empirical competition.

After luncheon Dr. Merillat demonstrated on an anæsthetized subject the following operations: "Median," "Ulnar," "Posterior Tibial" and "Peroneal Neurectomy."

"Peroneal Tenotomy," as modified, or rather amplified, by Dr. C. C. Lyford, was the next operation demonstrated by Dr. Merillat.

"High Plantar Neurectomy," by Dr. E. J. Walsh.

"Low Plantar Neurectomy," by Dr. F. J. Anderson.

This concluded the clinic and President Fisher announced his committee appointments.

Delegates to the American Veterinary Medical Association are: Dr. L. Van Es, Fargo, N. D.; Dr. R. C. Cliff, Park River, N. D.; Dr. J. W. Robinson, Garrison, N. D.

The association selected Dr. R. C. Cliff as their choice for appointment to fill vacancy on the board of veterinary examiners and the secretary was instructed to write the governor of the state to that effect and urging the appointment.

The association decided to continue the institute feature of the meetings for another year.

* Published in this issue of the REVIEW.

Dr. L. A. Merillat was tendered a rising vote of thanks for his able handling of the "Surgical Institute."

The following officers were elected for the ensuing year:

President, Dr. D. Fisher, Grandin, N. D.
Vice-President, Dr. E. J. Walsh, Minot, N. D.
Secretary, Dr. C. H. Babcock, New Rockford.
Treasurer, Dr. B. C. Taylor, Hillsboro.

Adjourned to meet at Agricultural College in January, 1912.

C. H. BABCOCK, *Secretary.*

SOCIETY OF COMPARATIVE MEDICINE

(NEW YORK STATE VETERINARY COLLEGE, CORNELL UNIVERSITY.)

The above society held its eighth annual banquet at the Ithaca Hotel, Ithaca, N. Y., January 11, 1911. After an excellent menu, Toastmaster Dr. P. A. Fish, introduced the speakers of the evening. These were: Dean L. H. Bailey, Dean T. H. Crane, Dean V. A. Moore, Dr. W. L. Williams, Dr. G. T. Stone, Dr. H. S. Beebe, Dr. D. H. Udall, Dr. F. D. Hollford and E. F. Painton, president of the Society of Comparative Medicine. This was the first banquet to be held in co-operation with the alumni, they adding much to its great success.

At the regular monthly meeting of the Society of Comparative Medicine, February 18, 1911, Dr. J. F. DeVine gave an address. His subject was "The State Quarantine Service." Following the talk Dr. DeVine answered a great many questions asked by members of the society. Officers were elected for the present college term. President, C. I. Corbin; Vice-President, R. R. Bolton; Secretary, J. K. Bosshart; Treasurer, A. C. Goff; Corresponding Secretary, J. F. Mitchell.

J. F. MITCHELL, *Corresponding Secretary.*

YORK COUNTY VETERINARY MEDICAL SOCIETY.

The meeting of the above association at York, Pa., on March 7, was largely attended and the subjects of live stock and dairy sanitation were among those which were discussed at length. This being the annual meeting, election of officers took place, with the following results:

President, Dr. W. L. Herbert.
First Vice-President, Dr. F. N. Kain.
Second Vice-President, Dr. J. D. Smith.
Secretary, Dr. E. S. Bausticker.
Treasurer, Dr. Charles Lenhart.

The trustees for the ensuing year are—Dr. Fred H. Hartenstein, Dr. W. E. Cranmer and Dr. C. A. Kain.

E. S. BAUSTICKER, *Secretary.*

INTERNATIONAL COMMISSION ON CONTROL OF BOVINE TUBERCULOSIS.

It seems advisable to keep the public informed in a general way concerning the work of this commission. Readers desiring to look up the personnel of this commission will find it in the AMERICAN VETERINARY REVIEW for October, 1910.

A meeting of this commission was held in Buffalo on February 27. It was decided that the first task would be the preparation of material for a small pamphlet on the subject of bovine tuberculosis. This pamphlet is to be very simply and plainly worded, for the general public, especially stock owners. It is to embody a full statement of available information on the subject, so far as it concerns the stock owner in a practical way, and so far as such information is accepted by the commission.

This primer will probably be published in very large editions in the United States and Canada and be given very wide distribution by the Canadian and United States governments and by our several states in this country.

The committee entrusted with the responsibility of preparing this pamphlet is: Dr. V. A. Moore, Cornell University; Dr. J.

R. Mohler, Federal Bureau of Animal Industry; Mr. J. J. Ferguson, representing American packers; Dr. Reynolds, Minnesota, representing American veterinarians in state work; Dr. F. Torrance, Manitoba, representing Canadian veterinarians.

The next meeting of this commission will be held at Toronto late in August.

M. H. REYNOLDS, *Secretary.*

REPORT OF COMMITTEE ON LEGISLATION.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION. ANNUAL MEETING, MARCH 7 AND 8, 1911.

Mr. President and Gentlemen:

The chairman of the Committee on Legislation amidst his greatly increased duties and personal bereavement has asked me as the second member of the committee to present a report for that body.

This committee, having as its chief duties that of looking after legislation in our state, has not had until the present legislative session any special work for the past two years.

Many changes have occurred in these two years. The second incumbent, since the death of our lamented leader Pearson, has now the office of State Veterinarian and in the appointment of Dr. C. J. Marshall we have great cause to rejoice. I know of no man living who will carry out with greater fidelity and more loving devotion the plans of Pearson than our esteemed colleague.

Already in the present legislature measures are pending to grant $100,000 for the further completion of the veterinary school buildings and a renewal of the maintenance support of $60,000 for the next two years. These measures should have our active and undivided support as they tend to build stronger and better the whole field of animal industry in its broadest and best sense.

The renewal of the appropriation for the Department of Agriculture, the State Live Stock Sanitary Board and the Meat Hygiene Service with larger appropriations for aiding in a better

milk supply for our cities are indeed of the greatest interest to us, and specially should they have our undivided favor at this time, in that one of our number has again been retained by the present state administration, the Hon. N. B. Critchfield, as Secretary of Agriculture. His retention assures the people of our state of the best methods and plans for serving the multiplied interests of agriculture in one of the richest and most densely populated states of our union.

Within the past year Mayor Reyburn of Philadelphia appointed one of the ablest commissions to consider the whole subject of our milk supply and its sources of production, that has ever considered this subject for any municipality of our land. The most exacting and conscientious work was done by this body during the past six months and they have brought forth the most comprehensive plan for dealing with this problem in their report, and to their lasting credit it has met with approval by the producer, the handler and dispenser, the press of our city, and from the people in general. More than that our lamented Pearson had long ago urged our state to appropriate money to aid cities and towns in this project, and this has been made available at this time to enter upon those plans. The past week the mayor has introduced in councils a bill for the appropriation of the needed sum of money—some $67,000—to carry the plan into effect, all of which should receive our support, and the city has petitioned the state to aid in the work.

During the past year Greater Pittsburg has taken a very advanced step in better measures to insure a more wholesome food supply for her people. In the Department of Health a food inspection division has been created and one of our members, Dr. J. C. McNeil, has been placed at the head of this department. Better care of all perishable food products has already been attained by this department. An educational campaign for a better milk supply at the source of its production and improved methods of handling in transit and at the dispensing point have already been inaugurated. A more rigid surveillance of the meat supply has been insured and consideration of a central abbatoir under municipal control and direction, the doing away with all private slaughter houses and better facilities for all handlers of meat products, while adding many additional safeguards to the consumer.

The Meat Hygiene Service of our state is bearing good fruit in many localities. In one of our inland cities, Reading, a meat

inspection service there has rendered splendid results to the people of that city. This post has been under the care of one of our members, Dr. George B. Fetherolf.

This brief survey of legislation, already a part of our state and municipal governments, gives us much food for pleasant reflections and adds an incentive to intensify this work all over our own state, until this great commonwealth of more than one-eleventh of the people of these United States may be made stronger, happier and better in every way.

Respectfully submitted,

W. HORACE HOSKINS.

DR. WALTER G. HOLLINGWORTH, Utica, N. Y., in a recent lecture before the veterinary students at Ithaca, announced that he had provided for an honorarium of $50 to be awarded annually to a senior or graduate student for advanced work or research in pathology and bacteriology. The doctor has taken a very active part in the campaign for better milk, and is widely known for his work in connection with it. In an address before the Society of Comparative Medicine, N. Y. S. Vet Coll., the same day, Dr. Hollingworth stated that one-third of the income from all agriculture in the State is derived from animals, whose valuation is placed at $189,000,000.

WARNING!

We beg to warn the medical profession against a rather unusual form of commercial effrontery and imposition. Three products have been introduced to the profession, the labels on the bottle bearing the fanciful names, Pix-Cresol, Methenysol, Zylol. The products are introduced, respectively, by Pix-Cresol Chemical Co., Kansas City, Mo.; Samuel Metheny, M.D., Lincoln, Neb.; Standard Chemical Co., Des Moines, Ia.

Analyses of these products as found in the open market, show that they contain from twenty-five to twenty-eight per cent. Chinosol, to which the promoters have added from seventy-five to seventy-two per cent. sugar of milk.

As the labels on the three products give no indication of the contents, we feel it our duty to notify the medical profession.

CHINOSOL COMPANY,
CHAS. ROOME PARMELE, *President.*
54 and 55 South Street, New York.

March 15, 1911.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alumni Ass'n, N. Y.-A. V. C.....	April 26, 1911...	141 W. 54th St.	J. F. Carey, East Orange, N.J.
American V. M. Ass'n.....	Aug. 22-25, 1911.	Toronto, Can.	C. J. Marshall, Philadelphia.
Arkansas Veterinary Ass'n.....	.....	.....	Horace E. Rice, Little Rock.
Ass'n Médécale Veterinare Française "Laval".....	1st and 3d Thur. of each month	Lec.Room,Laval Un'y,Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., So. Omaha ..	3d Mon. ea. mo.	S.Omaha, Neb	E. J. Jackson, So. Omaha.
California State V. M. Ass'n.....	.....	San Francisco.	J. J. Hogarty, Oakland.
Central Canada V. Ass'n.....	.....	Ottawa	A. E. James, Ottawa.
Central N. Y. Vet. Med. Ass'n....	June and Nov...	Syracuse	W. B. Switzer, Oswego.
Chicago Veterinary Society.....	2d Tues. ea. mo	Chicago	D. M. Campbell Chicago.
Colorado State V. M. Ass'n.....	June, 1911.....	Ft. Collins....	B. F. Kaupp, Ft. Collins.
Connecticut V. M. Ass'n.....	.....	.....	B. K. Dow, Willimantic.
Genesee Valley V. M. Ass'n.....	.....	.....	J. H. Taylor, Henrietta.
Georgia State V. M. A.....	.....	.....	P. F. Bahnsen, Americus
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Illinois State V. M. Ass'n.....	.....	.....	J. H. Crawford, Harvard.
Indiana Veterinary Association...	.....	.....	E. M. Bronson, Indianapolis.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison.
Kansas State V. M. Ass'n...	.....	.....	B. Rogers, Manhattan.
Kentucky V. M. Ass'n.....	.....	.....	D. A. Piatt, Lexington.
Keystone V. M. Ass'n.....	.....	.....	E. H. Yunker, Phila.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Maine Vet. Med. Ass'n	April, 1911.....	Bangor.....	C. W. Watson, Brunswick.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	J. H. Seale, Salem.
Michigan State V. M. Ass'n.....	.....	....	Judson Black, Richmond.
Minnesota State V. M. Ass'n.....	.....	.....	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n....	.....	.....	J. C. Robert, Agricultural Col.
Missouri Valley V. Ass'n.....	....	.....	Hal. C. Simpson, Denison, Ia.
Missouri Vet. Med. Ass'n	.....	.....	D. L. Luckey,
Montana State V. M. A.....	.....	Helena.....	W. S. Swank, Miles City.
Nebraska V. M. Ass'n.....	.....	Grand Island.	H. Jensen, Weeping Water.
New York S. V. M. Soc'y.....	Aug. 1911.....	Brooklyn	H. J. Milks, Ithaca, N. Y.
North Carolina V. M. Ass'n.....	....	.....	W. G. Chrisman, Raleigh.
North Dakota V. M. Ass'n.....	Jan. 1912.....	Agricul. Col..	C.H.Babcock, New Rockford.
North-Western Ohio V. M. A.....	Feb. and Nov...	Lima.	A. J. Kline, Wauseon.
Ohio State V. M. Ass'n.....	.....	.....	O. V. Brumley, Columbus.
Ohio Soc. of Comparative Med..	Annually	Up'r Sandusky	F. F. Sheets, Van Wert, Ohio.
Oklahoma V. M. Ass'n.....	.....	.....	M. P. Hunt, Enid.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple. Toronto.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Pennsylvania State V. M. A.....	.....	.....	F. H. Schneider, Phila.
Philippine V. M. A.....	.....	....	Chas. G. Thomson, Manila.
Portland Vet. Med. Ass'n.....	4th Tues. ea. mo.	Portland, Ore.	Peter Hanson, Portland, Ore.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence ...	J. S. Pollard, Providence
So. Illinois V. M. and Surg. A....	Aug. 1, 2, 3, 1911.	Centralia.....	F. Hockman, Louisville.
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm.T. Conway, St.Louis, Mo
Schuylkill Valley V. M. A.....	.....	.....	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn.....	.....	Philadelphia..	B.T.Woodward, Wash'n, D.C
South Dakota V. M. A.....	2d Tues. July '11	Watertown...	S. W. Allen, Watertown.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles..	A. D. Hubbell, Los Angeles.
So. St. Joseph Ass'n of Vet. Insp..	4th Tues. ea. mo.	407 Ill. Ave....	H. R. Collins, So. St. Joseph
Tennessee Vet. Med. Ass'n.....	.....	.....	A.C. Topmiller, Murfreesboro
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta.
Twin City V. M. Ass'n.....	2d Thu. ea. mo .	St.P.-Minneap	S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n	....	....	G. T. Stevenson, Burlington.
Veterinary Ass'n of Alberta.....	.....	.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo..	514—9th St., N. W.....	M. Page Smith, Wash., D.C
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
Vet. Med. Ass'n of N. J.....	July, 1911.....	N. Brunswick.	W. Herbert Lowe, Paterson.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	R. S. MacKellar, N. Y. City.
Veterinary Practitioners' Club....	Monthly.....	Jersey City ...	A. F. Mount, Jersey City.
Virginia State V. M. Ass'n.....	2d Fri. July, 1911	Norfolk.....	W. G. Chrisman, Raleigh.
Washington State Col. V. M. A ..	1st & 3d Fri. Eve.	Pullman.....	R. J. Donohue, Pullman.
Washington State V. M. A.....	.....	Seattle.....	J. T. Seely, Seattle.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh....	F. Weitzell, Allegheny.
Wisconsin Soc. Vet. Grad	Call of Sec'y....	Green Bay....	J. P. West, Madison.
York Co. (Pa.) V. M. A.....	.....	.....	E. S. Bausticker, York, Pa.

PUBLISHERS' DEPARTMENT.

Subscription price, $3 per annum, invariably in advance; Canadian subscriptions, $3.25; foreign countries, $3.60; students while attending college, $2; Students in Canada, $2.25; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. **Make all checks or P. O. orders payable to American Veterinary Review.**

CHINOSOL IS STILL AT THE TOP, not alone of the inside back-cover page of the REVIEW *every issue*, but at the top in *grade* as an antiseptic and germicide. The importers do not claim the latter, but we have demonstrated it clinically.

"Spring Coughs" are often very persistent, especially after cases of influenza, bronchitis, pneumonia, etc. In these cases Parke, Davis and Company's EQUINE COUGH SYRUP (the formula of which you may read on the bottle which illustrates the advertisement on page 4, adv. dept., of this issue), proves very efficacious.

Students about to graduate who are stocking up with instruments and appliances preparatory to entering into practice, should not overlook BLAND'S BALLING GUN. It is indispensable, and will save them much embarrassment in the administration of balls and capsules, to say nothing of "skinned knuckles." (See page 21.)

As spring is here and summer follows closely in its wake, the season when gastric colic is mostly met with, many veterinarians will remember with a shudder some of the cases they fought *last* summer (too often in vain), and will endeavor to outline some form of treatment that will give them more satisfactory results. Those well acquainted with the use of PHILLIPS' PERFECTED STOMACH TUBE, say that it gives *instant relief* and *positive cure* for *stomach flatulence*. That being true, it is the duty of *every* veterinarian to become well acquainted with the use of this most excellent device for the relief of such a distressing and dangerous condition in his equine patients. Write Dr. J. M. Phillips, whose address you will find on page 28 (adv. dept.) of this issue, for particulars. Mention the REVIEW when you write.